Centennial Corridor Project

City of Bakersfield and Kern County, CA

District 06 - KER – 58 - PM T31.7 to PM R55.6

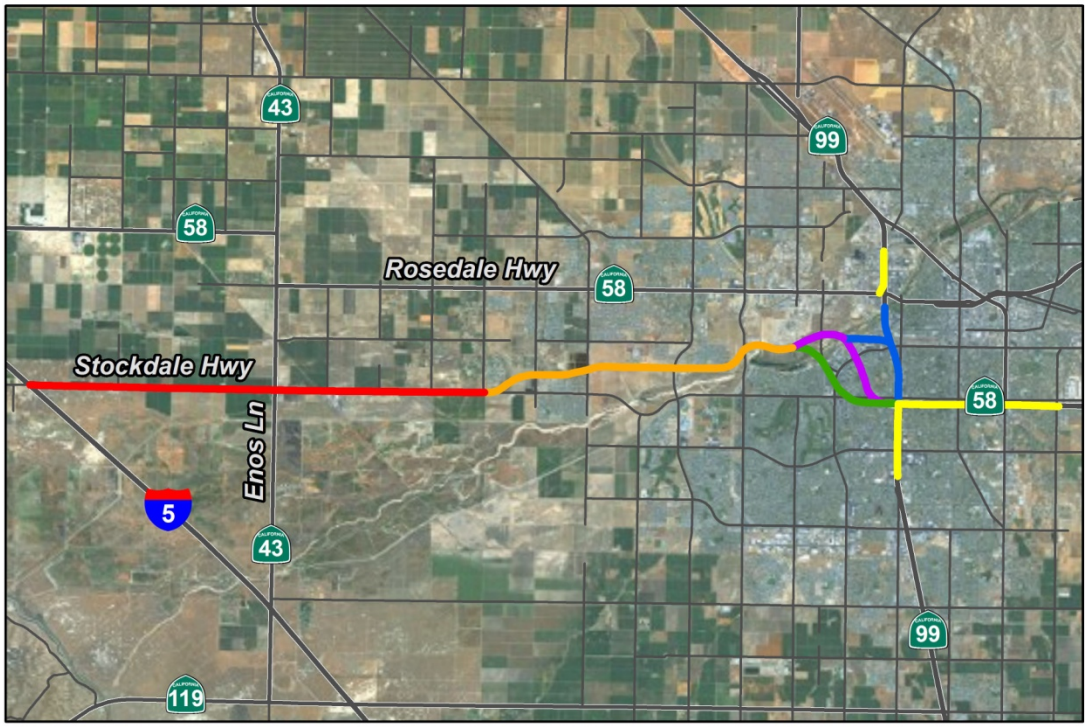
District 06 - KER – 99 - PM 21.2 to PM 26.2

Project ID # 06-0000-0484

SCH #2008091102

Noise Abatement Decision Report

(Supplemented by the January 2013 Noise Study Report)



May 2013

(Revised March 2014)

Caltrans

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List of Abbreviated Terms

Benefited residence	A dwelling unit expected to receive a noise reducton of at least 5 dBA from the proposed abatement measure
Caltrans	California Department of Transportation
C-D	Collector-distributor
CCD	Contract Cost Data
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CPI	Construction Price Index
Critical design receiver	The design receiver that is impacted and for which the absolute noise levels, build vs. existing noise levels, or achievable noise reduction will be at a maximum where noise abatement is considered
DAR	Direct Access Ramps
Date of public knowledge	The date that a project is approved—approval of the final environmental documentation (e.g., Record of Decision) is complete
dB	A measure of sound pressure level on a logarithmic scale
dBA	A-weighted sound pressure level
ED	Environmental Document
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
HOV	High Occupancy Vehicle
I-5	Interstate 5
Leq	Equivalent sound level (energy averaged sound level)
Leq[h]	A-weighted, energy average sound level during a 1-hour period
MCAS	Marine Corps Air Station
NAC	Noise abatement criteria
NADR	Noise Abatement Decision Report
NEPA	National Environmental Policy Act
NSR	Noise Study Report
Planned, designed, and programmed	A noise-sensitive land use is considered planned, designed, and programmed when it has received final development approval (generally the issuance of a building permit) from the local agency with jurisdiction
Protocol	Traffic Noise Analysis Protocol
PS&E	Plans, Specifications & Estimate
Reasonable allowance	A single dollar value—a reasonable allowance per benefited residence that embodies five reasonableness factors
SI	Severely impacted receptor

SR	State Route
SSP	Standard Special Provision
SWPPP	Storm Water Pollution Prevention Program
TCE	Temporary Construction Easement

Chapter 1. Introduction

The Noise Abatement Decision Report (NADR) presents the preliminary noise abatement decision as defined in the California Department of Transportation (Caltrans) Traffic Noise Analysis Protocol (Protocol) for the Centennial Corridor project on State Route (SR) 58 from Interstate 5 (I-5) to Cottonwood Road and on SR 99 from Wilson Road to Gilmore Avenue. A California licensed professional civil engineer approved this report. The January 2013 project level Noise Study Report (NSR) prepared for this project is incorporated by reference.

1.1. Noise Abatement Assessment Requirements

Title 23, Code of Federal Regulations (CFR), Part 772 of the Federal Highway Administration (FHWA) standards (23 CFR 772) and the Caltrans Traffic Noise Analysis Protocol require that noise abatement be considered for projects that are predicted to result in traffic noise impacts. A traffic noise impact is considered to occur when future predicted design-year noise levels with the project "approach or exceed" Noise Abatement Criteria (NAC) defined in 23 CFR 772 or when the predicted design-year noise levels with the project substantially exceed existing noise levels. A predicted design-year noise level is considered to "approach" the NAC when it is within 1 dB of the NAC. A substantial increase is defined as being a 12-dB increase above existing conditions.

Noise abatement measures, as listed in 23 CFR 772, require that reasonable and feasible measures that are likely to be incorporated into the project be identified before adoption of the final environmental document.

The Protocol establishes a process for assessing the reasonableness and feasibility of noise abatement. Before publication of the draft environmental document, a *preliminary noise abatement decision* is made. The preliminary noise abatement decision is based on the *feasibility* of evaluated abatement and the *preliminary reasonableness determination.* Noise abatement is considered to be acoustically feasible if it provides noise reduction of at least 5 dB at receivers subject to noise impacts. Other nonacoustical factors relating to geometric standards (e.g., sight distances), safety, maintenance, and security can also affect feasibility.

The preliminary reasonableness determination is made first by achieving the noise reduction design goal. The design goal is that a barrier must be predicted to provide at least 7 dB of noise reduction at one or more benefited receivers for the barrier to be

considered reasonable. Second, a preliminary reasonableness determination is then made by calculating an allowance that is considered to be a reasonable amount of money, per benefited residence, to spend on abatement. This *reasonble allowance* is then compared to the engineer's cost estimate for the abatement. If the engineer's cost estimate is less than the allowance, the preliminary determination is that the abatement is reasonable. If the cost estimate is higher than the allowance, the preliminary determination is that abatement is not reasonable. Finally, the preliminary reasonableness determination is made by evaluating the viewpoints of benefited receivers. If more than 50 percent of the votes from responding benefited receivers oppose the abatement, the abatement is not considered reasonable.

The NADR presents the preliminary noise abatement decision based on acoustical and nonacoustical feasibility factors and the relationship between noise abatement allowances and the engineer's cost estimate. The NADR does not present the final decision regarding noise abatement; rather, it presents key information on abatement to be considered throughout the environmental review process, based on the best available information at the time the draft environmental document is published. The final overall reasonableness decision will take this information into account, along with other reasonableness factors identified during the environmental review process. These factors may include the following:

- Impacts of abatement construction
- Public and local agency input
- Life cycle of abatement measures
- Views/opinions of impacted residents
- Social, economic, environmental, legal, and technological factors.

At the end of the public review process for the draft environmental document, the final noise abatement decision is made and is included in the final environmental document. The preliminary noise abatement decision will become the final noise abatement decision unless compelling information received during the environmental review process indicates that it should be changed.

1.2. Purpose of the Noise Abatement Decision Report

The following is the purpose of the NADR:

- Summarize the conclusions of the NSR relating to acoustical feasibility and the reasonable allowances for abatement evaluated

- Present the engineer's cost estimate for evaluated abatement
- Present the engineer's evaluation of nonacoustical feasibility issues
- Present the preliminary noise abatement decision
- Present preliminary information on the secondary effects of abatement on visual/aesthetic resources, biological resources, cultural resources, and hazardous materials.

The NADR does not address noise barriers or other noise-reducing treatments required as mitigation for significant adverse environmental effects identified under the California Environmental Quality Act (CEQA).

1.3. Project Description

Caltrans proposes to establish a new alignment for SR 58, which would provide a continuous route along SR 58 from Cottonwood Road on existing SR 58, east of SR 99 (post mile R55.6), to I-5 (post mile T31.7). Improvements to SR 99 (post miles 21.2 to 26.2) and Westside Parkway would also be made to accommodate the connection with SR 58.

The project is located at the southern end of the San Joaquin Valley in the city of Bakersfield in Kern County, California. The study site is bound on the east by Cottonwood Road, on the west by I-5, on the north by Gilmore Avenue, and on the south by Wilson Road. Caltrans is the lead agency for the project pursuant to the CEQA and the National Environmental Policy Act (NEPA).

The proposed continuous route, known as the Centennial Corridor, has been divided into three segments, as shown in Figure 1. The proposed project would provide route continuity and associated traffic congestion relief along SR 58 within Metropolitan Bakersfield and Kern County from SR 58 east (at Cottonwood Road) to I-5. The following is a description of each of the three segments.

Segment 1 is the easternmost segment, which would connect the existing SR 58 (East) freeway to the Westside Parkway. Multiple alignment alternatives are being evaluated for this segment and are discussed below. This NADR focuses on Segment 1.

Segment 2 is composed of the Westside Parkway, which extends westerly from Truxtun Avenue to Heath Road. This roadway is a local facility that is currently under construction and would be transferred into the State Highway System. The analysis evaluates potential impacts associated with incorporating the Westside Parkway as part

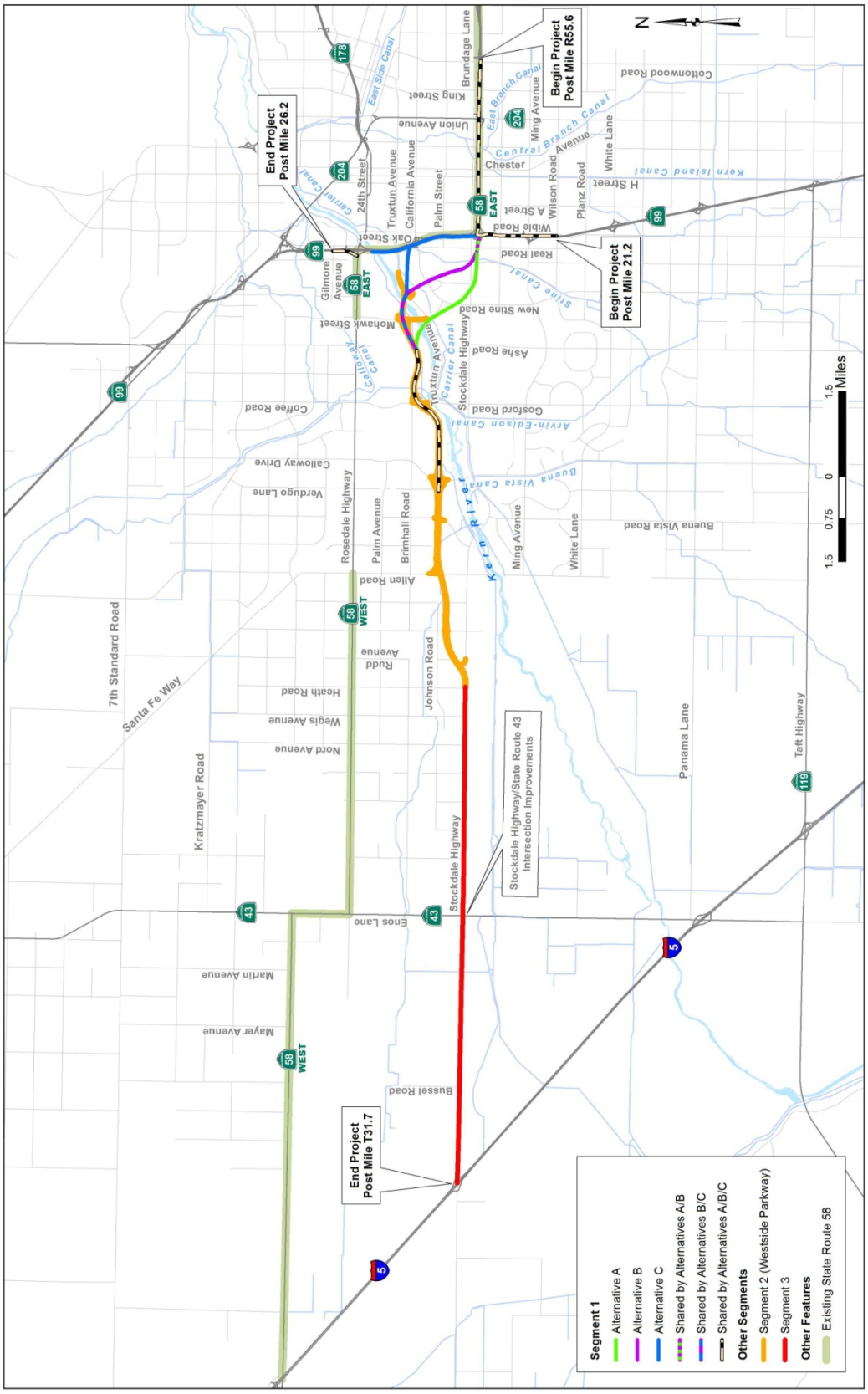

Figure 1 - Segments of the Centennial Corridor

of the State Highway System, as well as improvements to the Westside Parkway from Truxtun Avenue to the Calloway Drive interchange which would be made to facilitate traffic operations between the Westside Parkway and the Centennial Corridor. The analysis reports the relevant results of the *Westside Parkway Environmental Assessment/Final Environmental Impact Report* and provides updates, as necessary.

Segment 3 would extend from Heath Road to I-5. This segment will need a temporary route adoption for the use of Stockdale Highway between Heath Road and I-5 as an interim alignment for SR 58. A future new alignment (ultimate) as identified in the 2002 *Route 58 Route Adoption Project Tier I Environmental Impact Statement/Environmental Impact Report* (EIS/EIR) will be constructed when there is greater traffic demand and funding is available. Since traffic would use Stockdale Highway between Heath Road and I-5 on an interim basis, the potential impacts will also be evaluated for the interim use of Stockdale Highway. Improvements to the Stockdale Highway/State Route 43 (known locally as Enos Lane) intersection would be made to accommodate the additional traffic.

Segment 1 includes three build alternatives (Alternatives A, B, and C) and a No-Build Alternative. As shown in Figure 2, Build Alternatives A, B and C will share a common alignment in some areas while in other areas, their alignments will differ. Segment 1 is the easternmost segment of the Centennial Corridor project. The study area for Segment 1 is bound on the east by Cottonwood Road, on the west by Coffee Road, on the north by Gilmore Avenue, and on the south by Wilson Road. This NADR will address noise abatement for all three build alternatives of Segment 1.

No construction of Segment 1 would occur under the No-Build Alternative. In addition no improvements to the Westside Parkway from Truxtun Avenue to the Calloway Drive interchange would be required. There would also be no improvements made to the Stockdale Highway/SR 43 intersection. The No-Build Alternative would involve the following actions: (1) the Westside Parkway would be route adopted into the State Highway System; (2) the portion of Mohawk Street from the Westside Parkway to Rosedale Highway would be designated as part of SR 58, which would provide a connection to SR 99; (3) Stockdale Highway between Heath Road and I-5 would serve as an interim alignment for SR 58 until ultimate improvements are constructed; and (4) the portion of SR 58 (West) from Allen Road to I-5 would be relinquished to the local jurisdictions as a local facility.

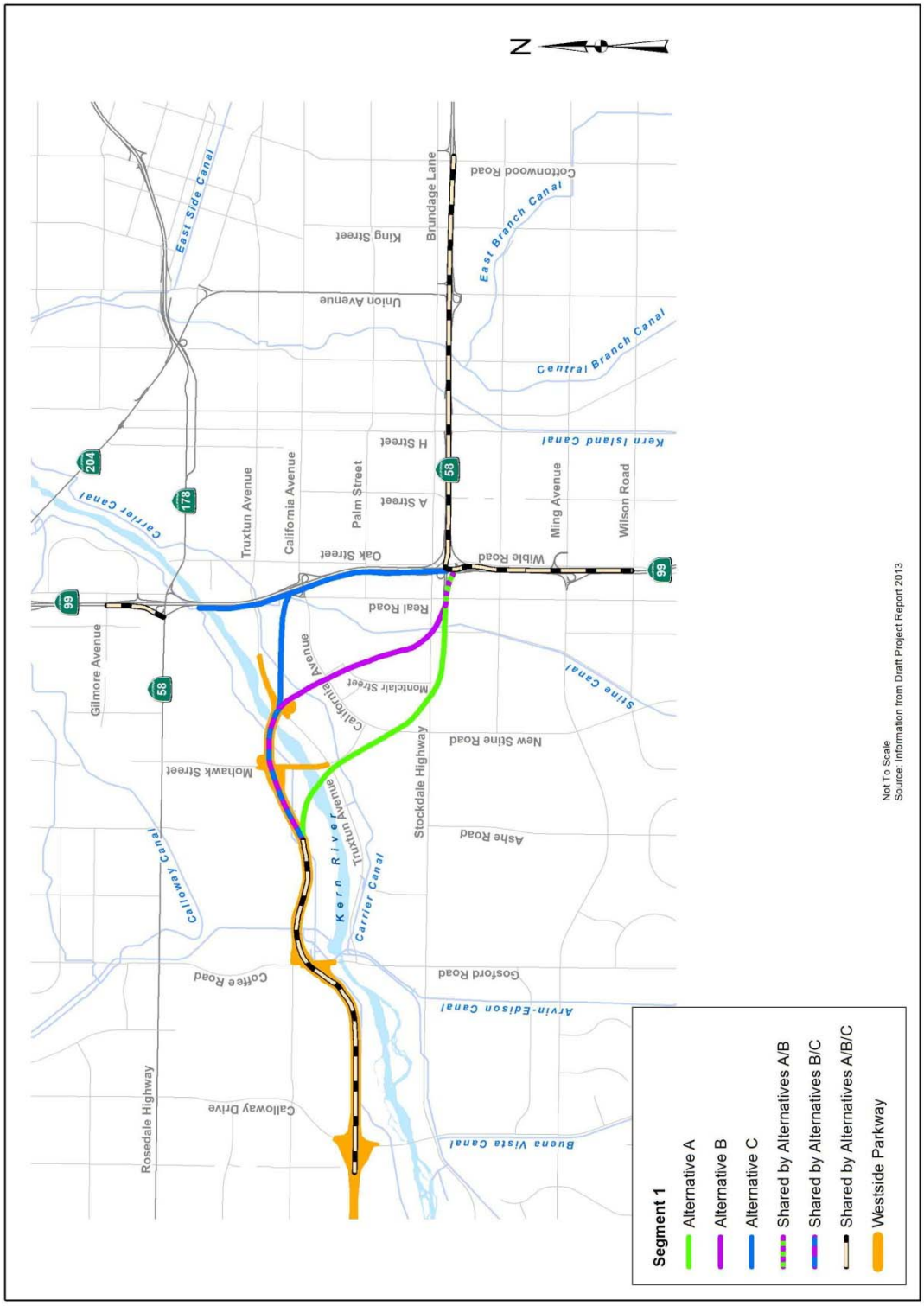

Figure 2 - Segment 1 of Centennial Corridor

The three build alternatives (Alternatives A, B, and C) within Segment 1 propose new alignments that would extend from Cottonwood Road on the existing SR 58 (East) and connect I-5 via the Westside Parkway. Alternatives A and B would be west of SR 99, and Alternative C would parallel SR 99 to the west. Under Alternative A, the eastern end of the Westside Parkway mainline would be realigned to conform to the Alternative A alignment, and ramp connections would be provided to the Mohawk Street interchange. Under Alternatives B and C, the alignments would connect to the Westside Parkway by extending the mainline lanes built as part of the Westside Parkway project.

The following are more detailed descriptions of Build Alternatives A, B, and C of Segment 1.

Alternative A

Alternative A would travel westerly from the existing SR 58/SR 99 interchange for about 1 mile, south of Stockdale Highway, where it would turn northwesterly and go over Stockdale Highway/Montclair Street, California Avenue/Lennox Avenue, Truxtun Avenue, and the Kern River before joining the eastern end of the Westside Parkway near the Mohawk Street interchange.

A link would be provided from northbound SR 99 to westbound Centennial Corridor and from eastbound Centennial Corridor to southbound SR 99 via high-speed connectors. No direct connector ramps would be built from southbound SR 99 to westbound Centennial Corridor or from eastbound Centennial Corridor to northbound SR 99. Southbound SR 99 would be widened to accommodate the additional traffic from eastbound Centennial Corridor to the southbound SR 99 connector. The existing westbound SR 58 (East) to southbound SR 99 loop-ramp connector would be realigned and would connect to the proposed eastbound Centennial Corridor to southbound SR 99 connector before merging onto southbound SR 99. The existing southbound SR 99 to eastbound SR 58 (East) connector and northbound SR 99 to eastbound SR 58 (East) connector would be preserved with some changes.

The limits of widening on SR 99 would extend to the Wilson Road overcrossing. On northbound SR 99, a three-lane exit would be provided just north of Wilson Road to carry the northbound SR 99 to westbound SR 58 traffic on two lanes and the Ming Avenue on- and off-ramp traffic on the third lane. All ramps in this area would have to be realigned to provide for the additional lanes. The Wible Road on- and off-ramps just south of the existing SR 58/SR 99 interchange, which is in conflict with the Caltrans standards of interchange spacing, would have to be removed to accommodate this design. The Stockdale Highway off-ramp on the southbound SR 99 to eastbound SR 58 (East)

connector would be removed as well. Under this concept, SR 58 would also lose its link with Real Road. Also, Alternative A would provide an auxiliary lane on southbound SR 99 from south of Gilmore Avenue to the Rosedale Highway off-ramp.

The median widening to provide an auxiliary lane along the Westside Parkway would extend westerly from the connection point with Centennial Corridor between Coffee Road and Mohawk Street to the Coffee Road off-ramp.

Other features with this alternative include: 1) the construction of 19 soundwalls; 2) the construction of a park and ride facility off Mohawk Street, between California Avenue and Truxtun Avenue, to replace the facility that would be displaced by the project; 3) 7 infiltration basins, which would be placed throughout the study area to retain stormwater runoff for water quality improvement purposes; and 4) 48 retaining walls of varying sizes located throughout the study area.

Alternative B

Alternative B would run westerly from the existing SR 58/SR 99 interchange for about 1,000 feet, south of Stockdale Highway, where it would turn northwesterly and span Stockdale Highway/Stine Road, California Avenue, Commerce Drive, Truxtun Avenue, and the Kern River before joining the east end of Westside Parkway between the Mohawk Street and Coffee Road interchanges. This alignment would depress SR 58 between California Avenue and Ford Avenue. Overcrossings are proposed at Marella Way and La Mirada Drive to ease traffic circulation.

Alternative B proposes the same connections to SR 99 that Alternative A does and would require similar improvements on SR 99 and existing SR 58.

The median widening to provide an auxiliary lane along the Westside Parkway would extend westerly from the connection point with Centennial Corridor between Coffee Road and Mohawk Street to the Coffee Road off-ramp. Modifications would be required to the eastbound Mohawk Street off-ramp, westbound Truxtun Avenue on-ramp, and reconstruction of the eastbound Mohawk Street loop on-ramp. In addition, construction of the proposed westbound Mohawk Street off-ramp and realignment of the Cross Valley Canal maintenance access road from Mohawk Street would be required.

Other features with this alternative include: 1) the construction of 24 soundwalls; 2) the construction of a park and ride facility north of California Avenue, next to the Centennial Corridor, to replace the facility that would be displaced by the project; 3) 8 infiltration basins that would be placed throughout the study area to retain stormwater runoff for

water quality improvement purposes; and 4) 42 retaining walls of varying sizes located throughout the study area.

Alternative C

Near the existing SR 58/SR 99 interchange, Alternative C would turn north and run parallel to the west of SR 99 for about 1 mile. The freeway would turn west and span the BNSF Railway rail yard, Truxtun Avenue, and the Kern River. This alternative proposes undercrossings at Brundage Lane, Oak Street, SR 99, Palm Avenue, and California Avenue.

Connections would be provided from eastbound SR 58 to southbound SR 99 and from northbound SR 99 to westbound SR 58. The existing westbound SR 58 to southbound SR 99 loop-ramp connector would connect to the proposed eastbound SR 58 to southbound SR 99 connector before merging onto southbound SR 99. The southbound SR 99 Ming Avenue off-ramp would be relocated north of the eastbound SR 58 to southbound SR 99 connector to facilitate weaving between the Ming Avenue off-ramp and the eastbound SR 58 to southbound SR 99 connector traffic. A connector would be provided east of northbound SR 99 from Brundage Lane to south of California Avenue to facilitate weaving between westbound SR 58 to northbound SR 99 traffic with northbound SR 99 to westbound SR 58 traffic.

Improvements on SR 99 would extend from the Wilson Road overcrossing (south of the SR 58/SR 99 interchange) to the Gilmore Avenue overcrossing (north of the SR 58/SR 99 interchange). A collector-distributor (C-D) road system would provide access from westbound SR 58 to northbound SR 99, as well as from northbound SR 99 to westbound SR 58. The Wible Road on- and off-ramps just south of the existing SR 58/SR 99 interchange would have to be removed to accommodate the northbound SR 99 auxiliary lane. The Stockdale Highway off-ramp on the southbound SR 99 to eastbound SR 58 connector would be removed as well. Under this concept, southbound SR 99 would also lose its link with Real Road.

The median widening to provide an auxiliary lane along Westside Parkway would extend westerly from the connection point with Centennial Corridor between Coffee Road and Mohawk Street to the Coffee Road off-ramp. Modifications would be required to the eastbound Mohawk Street off-ramp, westbound Truxtun Avenue on-ramp and reconstruction of the eastbound Mohawk Street loop on-ramp. In addition, construction of the proposed westbound Mohawk Street off-ramp and realignment of the Cross Valley Canal maintenance access road from Mohawk Street would be required.

Other features with this alternative include: (1) the construction of 17 soundwalls; (2) the construction of a park and ride facility at Real Road and Chester Lane to replace the facility that would be displaced by the project; (3) 11 infiltration basins that would be placed throughout the study area to retain stormwater runoff for water quality improvement purposes; and (4) 42 retaining walls of varying sizes located throughout the study area.

1.4. Affected Land Uses

A field investigation was done to identify land uses that could be subject to traffic noise impacts from the proposed project. Single-family residences and multi-family residences were identified as Activity Category B land uses. Stockdale Christian School, Centennial Park, Saunders Park, Central Bakersfield Community Center/Clinica Sierra Vista, Montessori Children's Center, and Camelot Park Family Fun Center were identified as Activity Category C land uses. Bakersfield Fire Station was identified as an Activity Category C and D land use, and various hotels/motels as well as Outback Restaurant's outside dining area were identified as Activity Category E land uses in the project area. Six places of worship have been identified in the project area; however, because there are no outdoor use areas and/or facades with windows facing the freeway, they have not been categorized as either Activity Category C or D land uses, respectively. Descriptions of the land use are provided below by area: west, east, north, and south.

- **West – Along SR 58 west of SR 99**
  This west area consists of single-family residences, multi-family residences, commercial establishments, and office buildings. A large number of all of these including apartment complexes and commercial buildings will be demolished as part of the project.
- **East – Along SR 58 east of SR 99**
  This area consists predominantly of single-family residences and multi-family residences. It also has some commercial establishments, churches, and a day care. Some of the residences and a few commercial properties will be demolished as part of the project.
- **North – Along SR 99 north of SR 58**
  The area in the north consists mostly of commercial land use with a number of hotels/motels. It also includes some single-family residences, multi-family residences, a park, and a family fun center. Some commercial buildings, some hotels/motels, and a row of homes along southbound SR 99 north of SR 58 will need to be demolished as part of the project.

- **South – Along SR 99 south of SR 58**
  The land use in this area consists largely of single-family residences and commercial establishments. This south area also contains a few multi-family residences and hotels/motels. Many of the single-family residences will be demolished.

Chapter 2. Results of the Noise Study Report

As stated in the Protocol, noise abatement is only considered for areas of frequent human use that would benefit from a lowered noise level. Accordingly, a noise study done in January 2013 determined future traffic noise impacts at frequent human use areas within the project corridor for all three build alternatives (Alternatives A, B, and C) in Segment 1 of the Centennial Corridor.

Multiple outdoor noise measurements were taken throughout the project study corridor to evaluate existing noise levels and to calibrate the FHWA Traffic Noise Model (TNM) 2.5 computer noise model. Where applicable, specific measurement sites were chosen to be representative of receiver sites with similar topography, proximity to the highway, orientation to the highway, and exposure angles with respect to frequent outdoor use areas adjacent to SR 58 and SR 99. Locations that are expected to receive the greatest traffic noise impacts, such as the first row of houses from the existing and proposed freeway, were chosen for noise measurement locations. In many locations of this project, second and third row houses became first row houses where property acquistions were necessary for the build out of the proposed project.

Noise measurements were mainly done in frequent outdoor human-use areas along the project alignment, primarily in locations with defined outdoor activity areas such as residential backyards, common use areas at multi-family residences, parks, and pool areas of hotels/motels. Where permits to enter were not obtained, short-term measurements were conducted within a nearby sidewalk or alley location determined to be acoustically representative of the actual frequent use area.

The future worst case traffic noise impact at frequent outdoor human use areas along the project corridor was modeled for the No-Build Alternative and the three build alternatives in order to determine appropriate abatement measures. Potential noise abatement measures identified in the Noise Protocol include the following:

- Avoiding the impact by using design alternatives, such as altering the horizontal and vertical alignment of the project
- Constructing noise barriers
- Acquiring property to serve as a buffer zone
- Using traffic management measures to regulate types of vehicles and speeds
- Acoustically insulating public-use or nonprofit institutional structures.

The above abatement options have been considered; however, because of the constrained configuration and suburban location of the project, abatement in the form of noise barriers is the only abatement measure considered to be feasible. In locations with noise impacts, a noise barrier analysis was conducted by placing soundwalls at the highway mainline outside edge of shoulder, on/off-ramp outside edge of shoulder, right-of-way line, and in limited cases within private property.

Each noise barrier was evaluated for feasibility based on achievable noise reduction (5-dB or more). For each noise barrier determined to be acoustically feasible, the estimated cost and total cost allowance for the noise barrier were calculated. If the estimated cost is found to be equal to or less than the total cost allowance then that noise barrier would have met the reasonableness criteria. The total cost allowance is calculated by multiplying the number of benefited residences by the cost allowance per benefited receiver/residence. A $55,000 cost allowance per benefited receiver/residence which is based on the published Caltrans annual Construction Price Index (CPI) was used.

The noise analysis considered barrier heights ranging from 8 to 16 feet. The barriers heights and locations were evaluated to determine if a minimum 5-dB attenuation at the outdoor frequent use areas of the representative receivers could be achieved. The reason for limiting the maximum soundwall height to 16 feet above the ground line is to comply with the recommendations set forth by the Highway Design Manual (Caltrans, 2012). The minimum barrier height required to cut the line-of-sight from each receiver to the exhaust stacks of heavy trucks has been calculated for all feasible barriers. These heights were evaluated through calculations performed by Traffic Noise Model, version 2.5 (TNM 2.5).

Figures in Appendices A, B, and C graphically show the locations and minimum heights of the soundwalls that would provide feasible abatement for Alternatives A, B, and C, respectively. Tables 2-1, 2-2, and 2-3 summarize the data used to assess the abatement cost allowances for the feasible soundwalls for Build Alternatives A, B, and C, respectively, at each of the barrier heights ranging from 8 feet to 16 feet. The information provided in these tables show soundwalls with a constant, uniform height (i.e., wall has the same height for the entire length of the wall). However, in many cases, the actual soundwalls being studied and analyzed have variable heights (i.e., wall has a different height at different segments of the wall), in which case, the information in the following tables may be slightly different from the actual data used to analyze the reasonableness and feasibility of the wall and can be used as a reference for comparison purposes to variable-height walls.

Table 2-1
Summary of Feasible & Recommended Soundwalls from Noise Study Report
(Alternative A)

Barrier No.	Location[1]	Station[2]	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S45	ROW WB 58E	36+25 to 56+05	8	Yes	13	$55,000	$715,000
			10	Yes	19	$55,000	$1,045,000
			12	Yes	22	$55,000	$1,210,000
			14	Yes	22	$55,000	$1,210,000
			16	Yes	22	$55,000	$1,210,000
S68	ROW EB 58E	56+60 to 80+25	8	Yes	15	$55,000	$825,000
			10	Yes	15	$55,000	$825,000
			12	Yes	16	$55,000	$880,000
			14	Yes	16	$55,000	$880,000
			16	Yes	16	$55,000	$880,000
S71	ROW WB 58E	64+22 to 77+83	8	Yes	3	$55,000	$165,000
			10	Yes	10	$55,000	$550,000
			12	Yes	13	$55,000	$715,000
			14	Yes	13	$55,000	$715,000
			16	Yes	13	$55,000	$715,000
S88	ES EB 58E	82+28 to 101+00	8	No	NA	NA	NA
			10	Yes	3	$55,000	$165,000
			12	Yes	12	$55,000	$660,000
			14	Yes	12	$55,000	$660,000
			16	Yes	12	$55,000	$660,000
S93	ROW WB 58E	89+85 to 96+20	8	No	NA	NA	NA
			10	Yes	2	$55,000	$110,000
			12	Yes	5	$55,000	$275,000
			14	Yes	7	$55,000	$385,000
			16	Yes	7	$55,000	$385,000
S106	ROW EB 58E	100+68 to 112+48	8	Yes	8	$55,000	$440,000
			10	Yes	8	$55,000	$440,000
			12	Yes	16	$55,000	$880,000
			14	Yes	16	$55,000	$880,000
			16	Yes	16	$55,000	$880,000

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99;
58E – SR 58 (East) located east of SR 99; 99 – SR 99;
WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound
[2]Stations are approximate and generally correspond to the freeway mainline stationing

Barrier No.	Location[1]	Station[2]	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S107	ES WB 58E	95+65 to 113+50	8	Yes	6	$55,000	$330,000
			10	Yes	15	$55,000	$825,000
			12	Yes	20	$55,000	$1,100,000
			14	Yes	20	$55,000	$1,100,000
			16	Yes	20	$55,000	$1,100,000
S108	ES EB 58E	89+95 to 128+00	8	Yes	16	$55,000	$880,000
			10	Yes	49	$55,000	$2,695,000
			12	Yes	57	$55,000	$3,135,000
			14	Yes	58	$55,000	$3,190,000
			16	Yes	58	$55,000	$3,190,000
S119	ES WB 58E	113+50 to 124+00	8	Yes	4	$55,000	$220,000
			10	Yes	12	$55,000	$660,000
			12	Yes	12	$55,000	$660,000
			14	Yes	12	$55,000	$660,000
			16	Yes	12	$55,000	$660,000
S144	ROW EB 58E	139+17 to 150+64	8	Yes	5	$55,000	$275,000
			10	Yes	5	$55,000	$275,000
			12	Yes	8	$55,000	$440,000
			14	Yes	18	$55,000	$990,000
			16	Yes	18	$55,000	$990,000
S147 S165	ROW/ES WB 58E	141+53 to 176+00	8	Yes	18	$55,000	$990,000
			10	Yes	46	$55,000	$2,530,000
			12	Yes	67	$55,000	$3,685,000
			14	Yes	67	$55,000	$3,685,000
			16	Yes	69	$55,000	$3,795,000
S164 S184	ES EB 58E	149+17 to 188+76	8	Yes	14	$55,000	$770,000
			10	Yes	39	$55,000	$2,145,000
			12	Yes	71	$55,000	$3,905,000
			14	Yes	71	$55,000	$3,905,000
			16	Yes	71	$55,000	$3,905,000

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99;
58E – SR 58 (East) located east of SR 99; 99 – SR 99;
WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound
[2]Stations are approximate and generally correspond to the freeway mainline stationing

Barrier No.	Location[1]	Station[2]	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S469	ES WB 58W	466+00 to 473+00	8	No	NA	NA	NA
			10	No	NA	NA	NA
			12	Yes	1	$55,000	$55,000
			14	Yes	1	$55,000	$55,000
			16	Yes	1	$55,000	$55,000
S474	ES EB 58W	461+70 to 487+00	8	No	NA	NA	NA
			10	Yes	25	$55,000	$1,375,000
			12	Yes	64	$55,000	$3,520,000
			14	Yes	72	$55,000	$3,960,000
			16	Yes	72	$55,000	$3,960,000
S499	ES WB 58W	490+89 to 505+00	8	Yes	9	$55,000	$495,000
			10	Yes	30	$55,000	$1,650,000
			12	Yes	47	$55,000	$2,585,000
			14	Yes	54	$55,000	$2,970,000
			16	Yes	54	$55,000	$2,970,000
S526	ROW/ES EB 58W	512+00 to 542+00 to 42+00 to 19+96	8	Yes	5	$55,000	$275,000
			10	Yes	31	$55,000	$1,705,000
			12	Yes	44	$55,000	$2,420,000
			14	Yes	52	$55,000	$2,860,000
			16	Yes	54	$55,000	$2,970,000
S531	ES WB 58W	524+00 to 539+00	8	Yes	1	$55,000	$55,000
			10	Yes	7	$55,000	$385,000
			12	Yes	11	$55,000	$605,000
			14	Yes	11	$55,000	$605,000
			16	Yes	11	$55,000	$605,000
S656	ROW NB 99	650+00 to 660+10	8	Yes	2	$55,000	$110,000
			10	Yes	3	$55,000	$165,000
			12	Yes	3	$55,000	$165,000
			14	Yes	3	$55,000	$165,000
			16	Yes	3	$55,000	$165,000

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99;
58E – SR 58 (East) located east of SR 99; 99 – SR 99;
WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound
[2]Stations are approximate and generally correspond to the freeway mainline stationing

Barrier No.	Location[1]	Station[2]	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S661	ROW SB 99	658+21 to 664+48	8	No	NA	NA	NA
			10	No	NA	NA	NA
			12	Yes	2	$55,000	$110,000
			14	Yes	2	$55,000	$110,000
			16	Yes	2	$55,000	$110,000
S669	ROW SB 99	665+39 to 671+54	8	Yes	1	$55,000	$55,000
			10	Yes	2	$55,000	$110,000
			12	Yes	4	$55,000	$220,000
			14	Yes	4	$55,000	$220,000
			16	Yes	5	$55,000	$275,000
S676	ROW NB 99	671+51 to 681+37	8	Yes	9	$55,000	$495,000
			10	Yes	13	$55,000	$715,000
			12	Yes	13	$55,000	$715,000
			14	Yes	13	$55,000	$715,000
			16	Yes	13	$55,000	$715,000

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99;
58E – SR 58 (East) located east of SR 99; 99 – SR 99;
WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound
[2]Stations are approximate and generally correspond to the freeway mainline stationing

Table 2-2
Summary of Feasible & Recommended Soundwalls from Noise Study Report
(Alternative B)

Barrier No.	Location[1]	Station[2]	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S45	ROW WB 58E	36+25 to 56+05	8	Yes	8	$55,000	$440,000
			10	Yes	19	$55,000	$1,045,000
			12	Yes	20	$55,000	$1,100,000
			14	Yes	22	$55,000	$1,210,000
			16	Yes	22	$55,000	$1,210,000
S68	ROW EB 58E	56+60 to 80+25	8	Yes	15	$55,000	$825,000
			10	Yes	15	$55,000	$825,000
			12	Yes	15	$55,000	$825,000
			14	Yes	16	$55,000	$880,000
			16	Yes	16	$55,000	$880,000
S71	ROW WB 58E	64+22 to 77+83	8	Yes	3	$55,000	$165,000
			10	Yes	10	$55,000	$550,000
			12	Yes	10	$55,000	$550,000
			14	Yes	13	$55,000	$715,000
			16	Yes	13	$55,000	$715,000
S93	ROW WB 58E	89+85 to 96+20	8	No	NA	NA	NA
			10	Yes	2	$55,000	$110,000
			12	Yes	5	$55,000	$275,000
			14	Yes	7	$55,000	$385,000
			16	Yes	7	$55,000	$385,000
S106	ROW EB 58E	100+68 to 112+48	8	Yes	7	$55,000	$385,000
			10	Yes	7	$55,000	$385,000
			12	Yes	15	$55,000	$825,000
			14	Yes	16	$55,000	$880,000
			16	Yes	16	$55,000	$880,000
S107	ES WB 58E	95+65 to 113+50	8	Yes	6	$55,000	$330,000
			10	Yes	15	$55,000	$825,000
			12	Yes	20	$55,000	$1,100,000
			14	Yes	20	$55,000	$1,100,000
			16	Yes	20	$55,000	$1,100,000

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99;
58E – SR 58 (East) located east of SR 99; 99 – SR 99;
WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound
[2]Stations are approximate and generally correspond to the freeway mainline stationing

Barrier No.	Location[1]	Station[2]	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S108	ES EB 58E	89+95 to 128+00	8	Yes	16	$55,000	$880,000
			10	Yes	49	$55,000	$2,695,000
			12	Yes	57	$55,000	$3,135,000
			14	Yes	58	$55,000	$3,190,000
			16	Yes	58	$55,000	$3,190,000
S119	ES WB 58E	113+50 to 124+00	8	Yes	4	$55,000	$220,000
			10	Yes	12	$55,000	$660,000
			12	Yes	12	$55,000	$660,000
			14	Yes	12	$55,000	$660,000
			16	Yes	12	$55,000	$660,000
S144	ROW EB 58E	139+17 to 150+64	8	Yes	5	$55,000	$275,000
			10	Yes	5	$55,000	$275,000
			12	Yes	8	$55,000	$440,000
			14	Yes	18	$55,000	$990,000
			16	Yes	18	$55,000	$990,000
S147 S165	ROW/ES WB 58E	141+53 to 176+00	8	Yes	18	$55,000	$990,000
			10	Yes	46	$55,000	$2,530,000
			12	Yes	67	$55,000	$3,685,000
			14	Yes	67	$55,000	$3,685,000
			16	Yes	69	$55,000	$3,795,000
S164 S184	ES EB 58E	149+17 to 188+76	8	Yes	14	$55,000	$770,000
			10	Yes	39	$55,000	$2,145,000
			12	Yes	71	$55,000	$3,905,000
			14	Yes	71	$55,000	$3,905,000
			16	Yes	71	$55,000	$3,905,000
S194	ES EB 58E	187+29 to 200+32 to 101+00	8	No	NA	NA	NA
			10	Yes	7	$55,000	$385,000
			12	Yes	12	$55,000	$660,000
			14	Yes	12	$55,000	$660,000
			16	Yes	12	$55,000	$660,000

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99; 58E – SR 58 (East) located east of SR 99; 99 – SR 99; WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound

[2]Stations are approximate and generally correspond to the freeway mainline stationing

Barrier No.	Location[1]	Station[2]	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S509 S519	ROW/ES EB 58W	506+63 to 523+36	8	Yes	6	$55,000	$330,000
			10	Yes	15	$55,000	$825,000
			12	Yes	29	$55,000	$1,595,000
			14	Yes	30	$55,000	$1,650,000
			16	Yes	30	$55,000	$1,650,000
S518	ROW/ES WB 58W	512+00 to 525+69	8	Yes	5	$55,000	$275,000
			10	Yes	8	$55,000	$440,000
			12	Yes	10	$55,000	$550,000
			14	Yes	18	$55,000	$990,000
			16	Yes	19	$55,000	$1,045,000
S529	ROW EB 58W	524+11 to 533+55	8	No	NA	NA	NA
			10	Yes	2	$55,000	$110,000
			12	Yes	3	$55,000	$165,000
			14	Yes	3	$55,000	$165,000
			16	Yes	3	$55,000	$165,000
S530	ROW WB 58W	526+41 to 532+94	8	Yes	5	$55,000	$275,000
			10	Yes	5	$55,000	$275,000
			12	Yes	8	$55,000	$440,000
			14	Yes	8	$55,000	$440,000
			16	Yes	8	$55,000	$440,000
S536 S544 S552	ROW/ES WB 58W	535+35 to 552+16	8	Yes	4	$55,000	$220,000
			10	Yes	12	$55,000	$660,000
			12	Yes	16	$55,000	$880,000
			14	Yes	22	$55,000	$1,210,000
			16	Yes	22	$55,000	$1,210,000
S537 S555	ROW/ES EB 58W	534+62 to 559+00 to 100+00 to 80+48	8	Yes	14	$55,000	$770,000
			10	Yes	31	$55,000	$1,705,000
			12	Yes	47	$55,000	$2,585,000
			14	Yes	52	$55,000	$2,860,000
			16	Yes	58	$55,000	$3,190,000

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99;
58E – SR 58 (East) located east of SR 99; 99 – SR 99;
WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound
[2]Stations are approximate and generally correspond to the freeway mainline stationing

Barrier No.	Location[1]	Station[2]	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S656	ROW NB 99	650+00 to 660+10	8	Yes	2	$55,000	$110,000
			10	Yes	3	$55,000	$165,000
			12	Yes	3	$55,000	$165,000
			14	Yes	3	$55,000	$165,000
			16	Yes	3	$55,000	$165,000
S661	ROW SB 99	658+64 to 664+48	8	No	NA	NA	NA
			10	Yes	1	$55,000	$55,000
			12	Yes	1	$55,000	$55,000
			14	Yes	2	$55,000	$110,000
			16	Yes	2	$55,000	$110,000
S669	ROW SB 99	665+63 to 671+54	8	Yes	4	$55,000	$220,000
			10	Yes	5	$55,000	$275,000
			12	Yes	5	$55,000	$275,000
			14	Yes	5	$55,000	$275,000
			16	Yes	5	$55,000	$275,000
S676	ROW NB 99	671+51 to 681+37	8	Yes	7	$55,000	$385,000
			10	Yes	7	$55,000	$385,000
			12	Yes	7	$55,000	$385,000
			14	Yes	9	$55,000	$495,000
			16	Yes	13	$55,000	$715,000

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99;
58E – SR 58 (East) located east of SR 99; 99 – SR 99;
WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound
[2]Stations are approximate and generally correspond to the freeway mainline stationing

Table 2-3
Summary of Feasible & Recommended Soundwalls from Noise Study Report
(Alternative C)

Barrier No.	Location[1]	Station[2]	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S90	ROW/ES EB 58E	82+00 to 96+25 to 104+35	8	No	NA	NA	NA
			10	Yes	4	$55,000	$220,000
			12	Yes	9	$55,000	$495,000
			14	Yes	13	$55,000	$715,000
			16	Yes	13	$55,000	$715,000
S103 S109	ROW WB 58E	97+85 to 112+73	8	Yes	12	$55,000	$660,000
			10	Yes	13	$55,000	$715,000
			12	Yes	13	$55,000	$715,000
			14	Yes	14	$55,000	$770,000
			16	Yes	14	$55,000	$770,000
S561	ES SB 99	544+00 to 565+00 to 65+00 to 79+78	8	No	NA	NA	NA
			10	Yes	13	$55,000	$715,000
			12	Yes	22	$55,000	$1,210,000
			14	Yes	22	$55,000	$1,210,000
			16	Yes	28	$55,000	$1,540,000
S610	ROW EB 58E	606+47 to 612+52	8	Yes	2	$55,000	$110,000
			10	Yes	4	$55,000	$220,000
			12	Yes	4	$55,000	$220,000
			14	Yes	4	$55,000	$220,000
			16	Yes	4	$55,000	$220,000
S624	ROW EB 58E	613+34 to 636+99	8	Yes	14	$55,000	$770,000
			10	Yes	15	$55,000	$825,000
			12	Yes	15	$55,000	$825,000
			14	Yes	16	$55,000	$880,000
			16	Yes	16	$55,000	$880,000
S629	ROW WB 58E	620+96 to 634+57	8	Yes	3	$55,000	$165,000
			10	Yes	10	$55,000	$550,000
			12	Yes	13	$55,000	$715,000
			14	Yes	13	$55,000	$715,000
			16	Yes	13	$55,000	$715,000

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99;
58E – SR 58 (East) located east of SR 99; 99 – SR 99;
WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound
[2]Stations are approximate and generally correspond to the freeway mainline stationing

Barrier No.	Location[1]	Station[2]	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S649	ROW WB 58E	646+61 to 653+00	8	No	NA	NA	NA
			10	Yes	2	$55,000	$110,000
			12	Yes	5	$55,000	$275,000
			14	Yes	7	$55,000	$385,000
			16	Yes	7	$55,000	$385,000
S661	ROW SB 99	658+63 to 664+49	8	No	NA	NA	NA
			10	No	NA	NA	NA
			12	Yes	1	$55,000	$55,000
			14	Yes	1	$55,000	$55,000
			16	Yes	1	$55,000	$55,000
S663	ES WB 58E	652+42 to 671+00	8	Yes	5	$55,000	$275,000
			10	Yes	18	$55,000	$990,000
			12	Yes	20	$55,000	$1,100,000
			14	Yes	20	$55,000	$1,100,000
			16	Yes	20	$55,000	$1,100,000
S664	ES EB 58E	646+59 to 685+00	8	Yes	17	$55,000	$935,000
			10	Yes	45	$55,000	$2,475,000
			12	Yes	57	$55,000	$3,135,000
			14	Yes	58	$55,000	$3,190,000
			16	Yes	58	$55,000	$3,190,000
S669	ROW SB 99	665+36 to 671+56	8	Yes	1	$55,000	$55,000
			10	Yes	1	$55,000	$55,000
			12	Yes	2	$55,000	$110,000
			14	Yes	3	$55,000	$165,000
			16	Yes	3	$55,000	$165,000
S676	ROW NB 99	671+51 to 681+00	8	Yes	11	$55,000	$605,000
			10	Yes	13	$55,000	$715,000
			12	Yes	13	$55,000	$715,000
			14	Yes	13	$55,000	$715,000
			16	Yes	13	$55,000	$715,000

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99;
58E – SR 58 (East) located east of SR 99; 99 – SR 99;
WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound
[2]Stations are approximate and generally correspond to the freeway mainline stationing

Barrier No.	Location[1]	Station[2]	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S677	ES WB 58E	671+00 to 682+00	8	Yes	2	$55,000	$110,000
			10	Yes	9	$55,000	$495,000
			12	Yes	12	$55,000	$660,000
			14	Yes	12	$55,000	$660,000
			16	Yes	12	$55,000	$660,000
S683	ROW SB 99	679+81 to 683+96	8	Yes	5	$55,000	$275,000
			10	Yes	5	$55,000	$275,000
			12	Yes	5	$55,000	$275,000
			14	Yes	5	$55,000	$275,000
			16	Yes	8	$55,000	$440,000
S702	ROW EB 58E	695+91 to 707+40	8	Yes	5	$55,000	$275,000
			10	Yes	5	$55,000	$275,000
			12	Yes	8	$55,000	$440,000
			14	Yes	18	$55,000	$990,000
			16	Yes	18	$55,000	$990,000
S703 S721	ROW/ES WB 58E	698+27 to 732+74	8	Yes	18	$55,000	$990,000
			10	Yes	46	$55,000	$2,530,000
			12	Yes	67	$55,000	$3,685,000
			14	Yes	69	$55,000	$3,795,000
			16	Yes	69	$55,000	$3,795,000
S722 S742	ES EB 58E	705+91 to 745+50	8	Yes	14	$55,000	$770,000
			10	Yes	39	$55,000	$2,145,000
			12	Yes	71	$55,000	$3,905,000
			14	Yes	71	$55,000	$3,905,000
			16	Yes	71	$55,000	$3,905,000
S815	ES SB 99	810+00 to 818+00	8	Yes	2	$55,000	$110,000
			10	Yes	2	$55,000	$110,000
			12	Yes	2	$55,000	$110,000
			14	Yes	2	$55,000	$110,000
			16	Yes	2	$55,000	$110,000

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99; 58E – SR 58 (East) located east of SR 99; 99 – SR 99; WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound

[2]Stations are approximate and generally correspond to the freeway mainline stationing

Barrier No.	Location[1]	Station[2]	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Reasonable Allowance per Residence	Total Reasonable Allowance
S818	ES NB 99	814+15 to 821+05	8	Yes	1	$55,000	$55,000
			10	Yes	1	$55,000	$55,000
			12	Yes	1	$55,000	$55,000
			14	Yes	1	$55,000	$55,000
			16	Yes	1	$55,000	$55,000

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99; 58E – SR 58 (East) located east of SR 99; 99 – SR 99; WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound

[2]Stations are approximate and generally correspond to the freeway mainline stationing

Chapter 3. Preliminary Noise Abatement Decision

3.1. Summary of Key Information

The Noise Study Report analyzes noise barriers with heights ranging from 8 to 16 feet to determine the feasibility of noise abatement. Tables 3-1, 3-2, and 3-3 summarize the preliminary noise abatement decision for Build Alternatives A, B, and C, respectively, by investigating acoustical feasibility, number of benefited residences, the total reasonable allowance ($55,000 per benefited receiver/residence), engineer's cost estimate for the abatement, comparison of cost versus allowance for each barrier height, and if the 7-dB reduction design goal is met. The information provided in these tables show soundwalls with a constant, uniform height (i.e., wall has the same height for the entire length of the wall). However, in many cases, the actual soundwalls being studied and analyzed have variable heights (i.e., wall has a different height at different segments of the wall), in which case, the information in the following tables may be slightly different from the actual data used to analyze the reasonableness and feasibility of the wall and can be used as a reference for comparison purposes to variable-height walls. Figures in Appendices A, B, and C graphically show the locations and minimum heights of the soundwalls that would provide feasible abatement for Alternatives A, B, and C, respectively.

Soundwall construction cost estimates are based on masonry walls in accordance with Caltrans' standard plans and specifications. Costs estimates are derived from the Caltrans Contract Cost Database (CCD; Caltrans, 2008-2010) which calculates an average unit cost of construction-related items from recent state transportation projects. Cost calculations for soundwalls include the cost of the wall, footing/piles, concrete barrier, earthwork, traffic control, permanent easements, and temporary construction easements (TCE). The final cost estimate also includes a 10 percent contingency. The engineer's cost estimate calculations for each wall in Build Alternatives A, B, and C are provided in Appendices D, E and F, respectively.

Table 3-1
Summary of Abatement Key Information
(Alternative A)

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S45	8	Yes	13	$715,000	$729,000	No	Yes
	10	Yes	19	$1,045,000	$862,000	Yes	
	12	Yes	22	$1,210,000	$978,000	Yes	
	14	Yes	22	$1,210,000	$1,094,000	Yes	
	16	Yes	22	$1,210,000	$1,227,000	No	
S68	8	Yes	15	$825,000	$721,000	Yes	Yes
	10	Yes	15	$825,000	$852,000	No	
	12	Yes	16	$880,000	$970,000	No	
	14	Yes	16	$880,000	$1,090,000	No	
	16	Yes	16	$880,000	$1,220,000	No	
S71	8	Yes	3	$165,000	$448,000	No	Yes
	10	Yes	10	$550,000	$542,000	Yes	
	12	Yes	13	$715,000	$624,000	Yes	
	14	Yes	13	$715,000	$707,000	Yes	
	16	Yes	13	$715,000	$801,000	No	
S88	8	No	NA	NA	NA	NA	Yes
	10	Yes	3	$165,000	$384,000	No	
	12	Yes	12	$660,000	$435,000	Yes	
	14	Yes	12	$660,000	$485,000	Yes	
	16	Yes	12	$660,000	$532,000	Yes	
S93	8	No	NA	NA	NA	NA	Yes
	10	Yes	2	$110,000	$229,000	No	
	12	Yes	5	$275,000	$266,000	Yes	
	14	Yes	7	$385,000	$303,000	Yes	
	16	Yes	7	$385,000	$345,000	Yes	
S106	8	Yes	8	$440,000	$411,000	Yes	Yes
	10	Yes	8	$440,000	$490,000	No	
	12	Yes	16	$880,000	$559,000	Yes	
	14	Yes	16	$880,000	$628,000	Yes	
	16	Yes	16	$880,000	$707,000	Yes	

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S107	8	Yes	6	$330,000	$332,000	No	Yes
	10	Yes	15	$825,000	$405,000	Yes	
	12	Yes	20	$1,100,000	$475,000	Yes	
	14	Yes	20	$1,100,000	$546,000	Yes	
	16	Yes	20	$1,100,000	$619,000	Yes	
S108	8	Yes	16	$880,000	$734,000	Yes	Yes
	10	Yes	49	$2,695,000	$876,000	Yes	
	12	Yes	57	$3,135,000	$1,017,000	Yes	
	14	Yes	58	$3,190,000	$1,158,000	Yes	
	16	Yes	58	$3,190,000	$1,296,000	Yes	
S119	8	Yes	4	$220,000	$218,000	Yes	Yes
	10	Yes	12	$660,000	$261,000	Yes	
	12	Yes	12	$660,000	$303,000	Yes	
	14	Yes	12	$660,000	$346,000	Yes	
	16	Yes	12	$660,000	$387,000	Yes	
S144	8	Yes	5	$275,000	$355,000	No	Yes
	10	Yes	5	$275,000	$432,000	No	
	12	Yes	8	$440,000	$498,000	No	
	14	Yes	18	$990,000	$565,000	Yes	
	16	Yes	18	$990,000	$642,000	Yes	
S147 S165	8	Yes	18	$990,000	$985,000	Yes	Yes
	10	Yes	46	$2,530,000	$1,157,000	Yes	
	12	Yes	67	$3,685,000	$1,318,000	Yes	
	14	Yes	67	$3,685,000	$1,480,000	Yes	
	16	Yes	69	$3,795,000	$1,643,000	Yes	
S164 S184	8	Yes	14	$770,000	$1,056,000	No	Yes
	10	Yes	39	$2,145,000	$1,217,000	Yes	
	12	Yes	71	$3,905,000	$1,379,000	Yes	
	14	Yes	71	$3,905,000	$1,541,000	Yes	
	16	Yes	71	$3,905,000	$1,691,000	Yes	

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S469	8	No	NA	NA	NA	NA	No
	10	No	NA	NA	NA	NA	
	12	Yes	1	$55,000	$233,000	No	
	14	Yes	1	$55,000	$261,000	No	
	16	Yes	1	$55,000	$286,000	No	
S474	8	No	NA	NA	NA	NA	Yes
	10	Yes	25	$1,375,000	$540,000	Yes	
	12	Yes	64	$3,520,000	$632,000	Yes	
	14	Yes	72	$3,960,000	$726,000	Yes	
	16	Yes	72	$3,960,000	$816,000	Yes	
S499	8	Yes	9	$495,000	$247,000	Yes	Yes
	10	Yes	30	$1,650,000	$297,000	Yes	
	12	Yes	47	$2,585,000	$348,000	Yes	
	14	Yes	54	$2,970,000	$400,000	Yes	
	16	Yes	54	$2,970,000	$450,000	Yes	
S526	8	Yes	5	$275,000	$1,343,000	No	Yes
	10	Yes	31	$1,705,000	$1,563,000	Yes	
	12	Yes	44	$2,420,000	$1,777,000	Yes	
	14	Yes	52	$2,860,000	$1,991,000	Yes	
	16	Yes	54	$2,970,000	$2,199,000	Yes	
S531	8	Yes	1	$55,000	$379,000	No	Yes
	10	Yes	7	$385,000	$437,000	No	
	12	Yes	11	$605,000	$497,000	Yes	
	14	Yes	11	$605,000	$553,000	Yes	
	16	Yes	11	$605,000	$606,000	No	
S656	8	Yes	2	$110,000	$158,000	No	No
	10	Yes	3	$165,000	$194,000	No	
	12	Yes	3	$165,000	$230,000	No	
	14	Yes	3	$165,000	$267,000	No	
	16	Yes	3	$165,000	$303,000	No	

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S661	8	No	NA	NA	NA	NA	No
	10	No	NA	NA	NA	NA	
	12	Yes	2	$110,000	$276,000	No	
	14	Yes	2	$110,000	$315,000	No	
	16	Yes	2	$110,000	$359,000	No	
S669	8	Yes	1	$55,000	$304,000	No	Yes
	10	Yes	2	$110,000	$363,000	No	
	12	Yes	4	$220,000	$415,000	No	
	14	Yes	4	$220,000	$466,000	No	
	16	Yes	5	$275,000	$525,000	No	
S676	8	Yes	9	$495,000	$320,000	Yes	Yes
	10	Yes	13	$715,000	$370,000	Yes	
	12	Yes	13	$715,000	$416,000	Yes	
	14	Yes	13	$715,000	$462,000	Yes	
	16	Yes	13	$715,000	$510,000	Yes	

Table 3-2
Summary of Abatement Key Information
(Alternative B)

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S45	8	Yes	8	$440,000	$729,000	No	Yes
	10	Yes	19	$1,045,000	$862,000	Yes	
	12	Yes	20	$1,100,000	$978,000	Yes	
	14	Yes	22	$1,210,000	$1,094,000	Yes	
	16	Yes	22	$1,210,000	$1,227,000	No	
S68	8	Yes	15	$825,000	$721,000	Yes	Yes
	10	Yes	15	$825,000	$852,000	No	
	12	Yes	15	$825,000	$970,000	No	
	14	Yes	16	$880,000	$1,090,000	No	
	16	Yes	16	$880,000	$1,220,000	No	
S71	8	Yes	3	$165,000	$448,000	No	Yes
	10	Yes	10	$550,000	$542,000	Yes	
	12	Yes	10	$550,000	$624,000	No	
	14	Yes	13	$715,000	$707,000	Yes	
	16	Yes	13	$715,000	$801,000	No	
S93	8	No	NA	NA	NA	NA	Yes
	10	Yes	2	$110,000	$229,000	No	
	12	Yes	5	$275,000	$266,000	Yes	
	14	Yes	7	$385,000	$303,000	Yes	
	16	Yes	7	$385,000	$345,000	Yes	
S106	8	Yes	7	$385,000	$412,000	No	Yes
	10	Yes	7	$385,000	$491,000	No	
	12	Yes	15	$825,000	$559,000	Yes	
	14	Yes	16	$880,000	$628,000	Yes	
	16	Yes	16	$880,000	$707,000	Yes	
S107	8	Yes	6	$330,000	$332,000	No	Yes
	10	Yes	15	$825,000	$405,000	Yes	
	12	Yes	20	$1,100,000	$475,000	Yes	
	14	Yes	20	$1,100,000	$546,000	Yes	
	16	Yes	20	$1,100,000	$619,000	Yes	

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S108	8	Yes	16	$880,000	$734,000	Yes	Yes
	10	Yes	49	$2,695,000	$876,000	Yes	
	12	Yes	57	$3,135,000	$1,017,000	Yes	
	14	Yes	58	$3,190,000	$1,158,000	Yes	
	16	Yes	58	$3,190,000	$1,296,000	Yes	
S119	8	Yes	4	$220,000	$218,000	Yes	Yes
	10	Yes	12	$660,000	$261,000	Yes	
	12	Yes	12	$660,000	$303,000	Yes	
	14	Yes	12	$660,000	$346,000	Yes	
	16	Yes	12	$660,000	$387,000	Yes	
S144	8	Yes	5	$275,000	$355,000	No	Yes
	10	Yes	5	$275,000	$432,000	No	
	12	Yes	8	$440,000	$498,000	No	
	14	Yes	18	$990,000	$565,000	Yes	
	16	Yes	18	$990,000	$642,000	Yes	
S147 S165	8	Yes	18	$990,000	$985,000	Yes	Yes
	10	Yes	46	$2,530,000	$1,157,000	Yes	
	12	Yes	67	$3,685,000	$1,318,000	Yes	
	14	Yes	67	$3,685,000	$1,480,000	Yes	
	16	Yes	69	$3,795,000	$1,643,000	Yes	
S164 S184	8	Yes	14	$770,000	$1,056,000	No	Yes
	10	Yes	39	$2,145,000	$1,217,000	Yes	
	12	Yes	71	$3,905,000	$1,379,000	Yes	
	14	Yes	71	$3,905,000	$1,541,000	Yes	
	16	Yes	71	$3,905,000	$1,691,000	Yes	
S194	8	No	NA	NA	NA	NA	Yes
	10	Yes	7	$385,000	$395,000	No	
	12	Yes	12	$660,000	$447,000	Yes	
	14	Yes	12	$660,000	$500,000	Yes	
	16	Yes	12	$660,000	$548,000	Yes	

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S509 S519	8	Yes	6	$330,000	$393,000	No	Yes
	10	Yes	15	$825,000	$479,000	Yes	
	12	Yes	29	$1,595,000	$559,000	Yes	
	14	Yes	30	$1,650,000	$643,000	Yes	
	16	Yes	30	$1,650,000	$724,000	Yes	
S518	8	Yes	5	$275,000	$395,000	No	Yes
	10	Yes	8	$440,000	$478,000	No	
	12	Yes	10	$550,000	$550,000	Yes	
	14	Yes	18	$990,000	$626,000	Yes	
	16	Yes	19	$1,045,000	$706,000	Yes	
S529	8	No	NA	NA	NA	NA	No
	10	Yes	2	$110,000	$341,000	No	
	12	Yes	3	$165,000	$396,000	No	
	14	Yes	3	$165,000	$452,000	No	
	16	Yes	3	$165,000	$515,000	No	
S530	8	Yes	5	$275,000	$315,000	No	Yes
	10	Yes	5	$275,000	$370,000	No	
	12	Yes	8	$440,000	$418,000	Yes	
	14	Yes	8	$440,000	$465,000	No	
	16	Yes	8	$440,000	$520,000	No	
S536 S544 S552	8	Yes	4	$220,000	$446,000	No	Yes
	10	Yes	12	$660,000	$523,000	Yes	
	12	Yes	16	$880,000	$596,000	Yes	
	14	Yes	22	$1,210,000	$669,000	Yes	
	16	Yes	22	$1,210,000	$741,000	Yes	
S537 S555	8	Yes	14	$770,000	$1,214,000	No	Yes
	10	Yes	31	$1,705,000	$1,431,000	Yes	
	12	Yes	47	$2,585,000	$1,637,000	Yes	
	14	Yes	52	$2,860,000	$1,844,000	Yes	
	16	Yes	58	$3,190,000	$2,054,000	Yes	

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S656	8	Yes	2	$110,000	$158,000	No	No
	10	Yes	3	$165,000	$194,000	No	
	12	Yes	3	$165,000	$230,000	No	
	14	Yes	3	$165,000	$267,000	No	
	16	Yes	3	$165,000	$303,000	No	
S661	8	No	NA	NA	NA	NA	No
	10	Yes	1	$55,000	$221,000	No	
	12	Yes	1	$55,000	$257,000	No	
	14	Yes	2	$110,000	$292,000	No	
	16	Yes	2	$110,000	$333,000	No	
S669	8	Yes	4	$220,000	$287,000	No	Yes
	10	Yes	5	$275,000	$343,000	No	
	12	Yes	5	$275,000	$392,000	No	
	14	Yes	5	$275,000	$441,000	No	
	16	Yes	5	$275,000	$497,000	No	
S676	8	Yes	7	$385,000	$320,000	Yes	Yes
	10	Yes	7	$385,000	$370,000	Yes	
	12	Yes	7	$385,000	$416,000	No	
	14	Yes	9	$495,000	$462,000	Yes	
	16	Yes	13	$715,000	$510,000	Yes	

Table 3-3
Summary of Abatement Key Information
(Alternative C)

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S90	8	No	NA	NA	NA	NA	Yes
	10	Yes	4	$220,000	$536,000	No	
	12	Yes	9	$495,000	$610,000	No	
	14	Yes	13	$715,000	$684,000	Yes	
	16	Yes	13	$715,000	$757,000	No	
S103 S109	8	Yes	12	$660,000	$394,000	Yes	Yes
	10	Yes	13	$715,000	$468,000	Yes	
	12	Yes	13	$715,000	$537,000	Yes	
	14	Yes	14	$770,000	$605,000	Yes	
	16	Yes	14	$770,000	$680,000	Yes	
S561	8	No	NA	NA	NA	NA	Yes
	10	Yes	13	$715,000	$892,000	No	
	12	Yes	22	$1,210,000	$1,026,000	Yes	
	14	Yes	22	$1,210,000	$1,160,000	Yes	
	16	Yes	28	$1,540,000	$1,288,000	Yes	
S610	8	Yes	2	$110,000	$245,000	No	Yes
	10	Yes	4	$220,000	$286,000	No	
	12	Yes	4	$220,000	$321,000	No	
	14	Yes	4	$220,000	$357,000	No	
	16	Yes	4	$220,000	$398,000	No	
S624	8	Yes	14	$770,000	$721,000	Yes	Yes
	10	Yes	15	$825,000	$852,000	No	
	12	Yes	15	$825,000	$970,000	No	
	14	Yes	16	$880,000	$1,090,000	No	
	16	Yes	16	$880,000	$1,220,000	No	
S629	8	Yes	3	$165,000	$448,000	No	Yes
	10	Yes	10	$550,000	$542,000	Yes	
	12	Yes	13	$715,000	$624,000	Yes	
	14	Yes	13	$715,000	$707,000	Yes	
	16	Yes	13	$715,000	$801,000	No	

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S649	8	No	NA	NA	NA	NA	Yes
	10	Yes	2	$110,000	$123,000	No	
	12	Yes	5	$275,000	$146,000	Yes	
	14	Yes	7	$385,000	$169,000	Yes	
	16	Yes	7	$385,000	$192,000	Yes	
S661	8	No	NA	NA	NA	NA	No
	10	No	NA	NA	NA	NA	
	12	Yes	1	$55,000	$258,000	No	
	14	Yes	1	$55,000	$293,000	No	
	16	Yes	1	$55,000	$335,000	No	
S663	8	Yes	5	$275,000	$501,000	No	Yes
	10	Yes	18	$990,000	$578,000	Yes	
	12	Yes	20	$1,100,000	$653,000	Yes	
	14	Yes	20	$1,100,000	$729,000	Yes	
	16	Yes	20	$1,100,000	$801,000	Yes	
S664	8	Yes	17	$935,000	$726,000	Yes	Yes
	10	Yes	45	$2,475,000	$867,000	Yes	
	12	Yes	57	$3,135,000	$1,009,000	Yes	
	14	Yes	58	$3,190,000	$1,151,000	Yes	
	16	Yes	58	$3,190,000	$1,289,000	Yes	
S669	8	Yes	1	$55,000	$301,000	No	Yes
	10	Yes	1	$55,000	$360,000	No	
	12	Yes	2	$110,000	$411,000	No	
	14	Yes	3	$165,000	$463,000	No	
	16	Yes	3	$165,000	$521,000	No	
S676	8	Yes	11	$605,000	$321,000	Yes	Yes
	10	Yes	13	$715,000	$375,000	Yes	
	12	Yes	13	$715,000	$427,000	Yes	
	14	Yes	13	$715,000	$478,000	Yes	
	16	Yes	13	$715,000	$533,000	Yes	

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S677	8	Yes	2	$110,000	$280,000	No	Yes
	10	Yes	9	$495,000	$323,000	Yes	
	12	Yes	12	$660,000	$366,000	Yes	
	14	Yes	12	$660,000	$409,000	Yes	
	16	Yes	12	$660,000	$448,000	Yes	
S683	8	Yes	5	$275,000	$227,000	Yes	Yes
	10	Yes	5	$275,000	$264,000	Yes	
	12	Yes	5	$275,000	$296,000	No	
	14	Yes	5	$275,000	$329,000	No	
	16	Yes	8	$440,000	$366,000	Yes	
S702	8	Yes	5	$275,000	$355,000	No	Yes
	10	Yes	5	$275,000	$432,000	No	
	12	Yes	8	$440,000	$498,000	No	
	14	Yes	18	$990,000	$565,000	Yes	
	16	Yes	18	$990,000	$642,000	Yes	
S703 S721	8	Yes	18	$990,000	$985,000	Yes	Yes
	10	Yes	46	$2,530,000	$1,157,000	Yes	
	12	Yes	67	$3,685,000	$1,318,000	Yes	
	14	Yes	69	$3,795,000	$1,480,000	Yes	
	16	Yes	69	$3,795,000	$1,643,000	Yes	
S722 S742	8	Yes	14	$770,000	$1,056,000	No	Yes
	10	Yes	39	$2,145,000	$1,217,000	Yes	
	12	Yes	71	$3,905,000	$1,379,000	Yes	
	14	Yes	71	$3,905,000	$1,541,000	Yes	
	16	Yes	71	$3,905,000	$1,691,000	Yes	
S815	8	Yes	2	$110,000	$176,000	No	Yes
	10	Yes	2	$110,000	$206,000	No	
	12	Yes	2	$110,000	$236,000	No	
	14	Yes	2	$110,000	$267,000	No	
	16	Yes	2	$110,000	$296,000	No	

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Cost Less than Allowance?	Meets 7-dB Reduction Design Goal?
S818	8	Yes	1	$55,000	$176,000	No	Yes
	10	Yes	1	$55,000	$203,000	No	
	12	Yes	1	$55,000	$230,000	No	
	14	Yes	1	$55,000	$257,000	No	
	16	Yes	1	$55,000	$282,000	No	

3.2. Non-acoustical Factors Relating to Feasibility

Based on the preliminary project and abatement design, no non-acoustical factors related to feasibility have been identified that would be considered out of the ordinary for soundwall construction. The non-acoustical factors considered are geometric standards (e.g., sight distances), safety, maintenance, security, geotechnical issues, and utility relocations. Some of these non-acoustical factors including geotechnical issues will need to be investigated in the design phase.

Some barriers may be constructed along or near private properties resulting in encroachment onto those private properties during construction of the sound barrier. In such cases, the affected private property owners would need to sign a Temporary Construction Easement Form prior to the beginning of construction. Barriers would not substantially affect the cost or design of other project features except for barriers located on structures. Construction requirements are considered typical for soundwall construction.

3.3. Preliminary Recommendation and Decision

The preliminary noise abatement decision presented in this report is based on preliminary project alignments and profiles, which may be subject to change. As such, the physical characteristics of noise abatement described herein also may be subject to change. If pertinent parameters change substantially during the final project design, the preliminary noise abatement decision may be changed or eliminated from the final project design. A final decision to construct noise abatement will be made upon completion of the project design.

The preliminary noise abatement decision presented in this section will be included in the draft environmental document, which will be circulated for public review.

Based on the information summarized in Table 3-1, cost estimate calculations in Appendix D**,** and noise reductions specified in the NSR, the following tables present the engineer's recommendation on the proposed height and reasonableness for each feasible and proposed soundwall in Build Alternative A. Figures in Appendix G graphically show the locations and heights of the recommended soundwalls of Alternative A.

Soundwall S45 (Alternative A)

Discussion

S45 is a 1,982-foot-long soundwall located along the state right-of-way line on the westbound SR 58 mainline between SR 99 and Hughes Lane (see Figures 4 and 5 in Appendix A). Figures 4 and 5 also show the 8-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 22 residences. S45 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 22 residences, based on $55,000 per residence, is $1,210,000. The estimated total construction cost of the 8-foot to 12-foot variable-height soundwall on spread footing is $922,000, less than the total reasonable allowance.

A 12-foot uniform-height soundwall compared to the 8-foot to 12-foot variable-height soundwall would provide the aesthetic benefit of a uniform-height wall as well as some acoustic benefits at an incremental cost of $56,000 for a total cost of $978,000 to remain less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S45. The location and recommended height of the soundwall are shown in Figures 4 and 5 in Appendix G.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12	Yes	22	$1,210,000	$978,000	Yes

Soundwall S68 (Alternative A)

Discussion

S68 is a 2,399-foot-long soundwall located along the existing right-of-way line on eastbound SR 58 between Hughes Lane and H Street (see Figures 5 and 6 in Appendix A). Figures 5 and 6 also show the 8-foot to 10-foot minimum wall heights necessary to meet the feasibility criteria to benefit 15 residences. S68 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 15 residences, based on $55,000 per residence, is $825,000. The estimated total construction cost of the 8-foot to 10-foot variable-height soundwall that is partially on spread footing and partially on retaining wall is $739,000, less than the total reasonable allowance.

Consideration was given for a 10-foot uniform-height soundwall; however, the cost of a 10-foot-high S68 would be $853,000, exceeding the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

An 8-foot-high to10-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S68. The location and recommended heights of the soundwall are shown in Figures 5 and 6 in Appendix G. The soundwall is 8 feet high for its entire length except from STA 71+00 to 73+40 where it is 10 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8-10	Yes	15	$825,000	$739,000	Yes

Soundwall S71 (Alternative A)

Discussion

S71 is a 1,403-foot-long soundwall located along the back of sidewalk of Roosevelt Street on westbound SR 58 west of H Street (see Figures 5 and 6 in Appendix A). Figures 5 and 6 also show the 8-foot minimum wall height necessary to meet the feasibility criteria to benefit 3 residences. S71 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 3 residences, based on $55,000 per residence, is $165,000. The estimated total construction cost of the 8-foot-high soundwall on spread footing is $448,000, significantly exceeding the total reasonable allowance.

Consideration was given for a 10-foot-high soundwall that would benefit 10 residences, resulting in a total reasonable allowance of $550,000. The estimated total construction cost of the 10-foot-high soundwall, including $215,000 for the reconstruction of an existing 430-foot-long retaining wall, is $757,000, exceeding the total reasonable

allowance.

An existing pump station is located at approximately STA 76+20. After further evaluation, consideration was then given to separating S71 into two separate soundwalls, one west of and the other east of the pump station with a gap between the two soundwalls for access to the pump station. The soundwall to the west of the pump station would be 1,235 feet long. As an 8-foot-high wall, it would benefit 1 residence and have a total reasonable allowance of $55,000. The estimated total construction cost of the 8-foot-high soundwall, including reconstruction of the existing 430-foot-long retaining wall, is $592,000, exceeding the $55,000 total reasonable allowance. As a 10-foot-high wall, it would benefit 8 residences for a total reasonable allowance of $440,000 and have an estimated construction cost of $675,000, again exceeding the reasonable allowance.

The soundwall to the east of the pump station would be 124 feet long. As an 8-foot-high wall, it would benefit 2 residences for a total reasonable allowance of $110,000. The estimated total construction cost of the 8-foot-high soundwall is $54,000, less than the total reasonable allowance. This soundwall to the east of the pump station will be named **S71A** to distinguish it from the original S71 soundwall.

Preliminary Noise Abatement Decision and Recommendation

An 8-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S71A. The location and recommended height of the soundwall are shown in Figure 6 in Appendix G.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8	Yes	2	$110,000	$54,000	Yes

Soundwall S88 (Alternative A)

Discussion

S88 is a 1,307-foot-long soundwall located along the edge of shoulder of the SR 99/SR 58 northbound-to-eastbound connector (see Figures 4 and 5 in Appendix A). Figures 4 and 5 also show the 12-foot minimum wall height necessary to meet the feasibility criteria to benefit 12 residences. S88 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 12 residences, based on $55,000 per residence, is $660,000. The estimated total construction cost of the 12-foot-high soundwall on top of barrier is $435,000, less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S88. The location and recommended height of the soundwall are shown in Figures 4 and 5 in Appendix G.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12	Yes	12	$660,000	$435,000	Yes

Soundwall S93 (Alternative A)

Discussion

S93 is a 633-foot-long soundwall located along the state right-of-way line and Richland Street on westbound SR 58 near Chester Avenue (see Figure 6 in Appendix A). Figure 6 also shows the 16-foot minimum wall height necessary to meet the feasibility criteria to benefit 7 residences. S93 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 7 residences, based on $55,000 per residence, is $385,000. The estimated total construction cost of the 16-foot-high soundwall on spread footing is $345,000, less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 16-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S93. The location and recommended height of the soundwall are shown in Figure 6 in Appendix G.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
16	Yes	7	$385,000	$345,000	Yes

Soundwall S106 (Alternative A)

Discussion

S106 is a 1,174-foot-long soundwall located along the existing right-of-way line on eastbound SR 58 just west of Hughes Lane (see Figure 5 in Appendix A). Figure 5 also shows the 8-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 8 residences and 1 recreational area. S106 meets the 7-dB noise

reduction design goal. The total reasonable allowance benefiting the 8 residences and 1 recreational area, based on $55,000 per residence or recreational area, is $495,000. The estimated total construction cost of the 8-foot to 12-foot variable-height soundwall on spread footing is $471,000, less than the total reasonable allowance.

Consideration was given to raising the two segments of S106 that are 8 feet high to a height of 10 feet to make the soundwall a more uniform-height wall; however, it would result in an incremental cost of $41,000 for a total wall cost of $512,000 to exceed the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

An 8-foot-high to 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S106. The location and recommended heights of the soundwall are shown in Figure 5 in Appendix G. The 8-foot-high wall is from STA 100+68 to 104+52 and from 110+12 to 112+48. The 10-foot-high wall is from STA 104+52 to 105+62 and from 108+89 to 110+12. The 12-foot-high wall is from STA 105+62 to 108+89.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8-12	Yes	9	$495,000	$471,000	Yes

Soundwall S107 (Alternative A)

Discussion

S107 is a 1,800-foot-long soundwall located almost entirely on top of a retaining wall along the edge of shoulders of the westbound SR 58 mainline and the westbound Chester Avenue off-ramp (see Figures 6 and 7 in Appendix A). A short segment of the soundwall at the Chester Ave off-ramp terminus is along the state right-of-way line. Figures 6 and 7 also show the 8-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 18 residences. S107 meets the 7-dB noise reduction design goal. Where the segment of the wall that is 8 feet high is analyzed as a 10-foot-high wall, it would provide acoustic benefits and the aesthetic benefit of a more uniform-height wall at a small incremental cost. The total reasonable allowance benefiting the 18 residences, based on $55,000 per residence, is $990,000. The estimated total construction cost of the 10-foot to 12-foot variable-height soundwall that is mostly on retaining wall and partially on spread footing is $421,000, less than the total reasonable allowance.

Consideration was given for a 12-foot uniform-height S107 instead of the 10-foot to 12-foot variable-height soundwall; however, given that only a short segment of the wall (400 feet of its 1,800-foot length) is 12 feet high, raising the remaining 1,400 feet of the soundwall to 12 feet high mainly for the aesthetic benefit of a uniform-height soundwall with minimal acoustic benefit would not justify its $55,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S107. The location and recommended heights of the soundwall are shown in Figures 6 and 7 in Appendix G. The entire length of the wall would be 10 feet high except for the 400 feet between STA 98+00 and 102+00 where it would be 12 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	18	$990,000	$421,000	Yes

Soundwall S108 (Alternative A)

Discussion

S108 is a 3,817-foot-long soundwall located mostly on top of retaining wall along the edge of shoulder of the eastbound SR 58 mainline and also on barrier along the edge of shoulders of the eastbound Chester Avenue on-ramp and eastbound Union Avenue off-ramp (see Figures 6 and 7 in Appendix A). Figures 6 and 7 also show the 10-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit 58 residences. S108 meets the 7-dB noise reduction design goal. Where the two segments of the wall that are 10 feet high are raised to a height of 12 feet, they would provide acoustic benefits and the aesthetic benefit of a more uniform-height wall at a small incremental cost. The total reasonable allowance benefiting the 58 residences, based on $55,000 per residence, is $3,190,000. The estimated total construction cost of the 12-foot to 14-foot variable-height soundwall that is mostly on retaining wall and partially on barrier is $1,036,000, less than the total reasonable allowance.

Consideration was given for a 14-foot uniform-height S108 instead of the 12-foot to 14-foot variable-height soundwall; however, given that only a short segment of the wall (520 feet of its 3,817-foot length) is 14 feet high, raising the remaining 3,297 feet of the soundwall to 14 feet high mainly for the aesthetic benefit of a uniform-height soundwall would not justify its $126,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 12-foot-high to 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S108. The location and recommended heights of the soundwall are shown in Figures 6 and 7 in Appendix G. Between STA 89+95 and 122+81, the wall would be 12 feet high. Between STA 122+81 and 128+00, it would be 14 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12-14	Yes	58	$3,190,000	$1,036,000	Yes

Soundwall S119 (Alternative A)

Discussion

S119 is a 1,150-foot-long soundwall located along the edge of shoulder mostly on top of retaining wall and partially on barrier on the westbound SR 58 mainline, east of P Street (see Figure 7 in Appendix A). Figure 7 also shows the 8-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 12 residences. S119 meets the 7-dB noise reduction design goal. Where the segment of the wall that is 8 feet high between STA 113+50 and 116+00 is analyzed as a 10-foot-high wall, it would provide acoustic benefits and the aesthetic benefit of a more uniform-height wall at a small incremental cost. The total reasonable allowance benefiting the 12 residences, based on $55,000 per residence, is $660,000. The estimated total construction cost of the 10-foot to 12-foot variable-height soundwall that is mostly on retaining wall and partially on barrier is $276,000, less than the total reasonable allowance.

Consideration was given for a 12-foot uniform-height S119 instead of the 10-foot to 12-foot variable-height soundwall; however, the 12-foot-high soundwall would provide no acoustic advantages compared to the 10-foot-high to 12-foot-high soundwall and is therefore not being recommended.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S119. The location and recommended heights of the soundwall are shown in Figure 7 in Appendix G. Between STA 113+50 and 121+25, the wall would be 10 feet high. The remaining length of the wall from STA 121+25 to 124+00 would be 12 feet high.

The table below summarizes the information used to make the preliminary noise

abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	12	$660,000	$276,000	Yes

Soundwall S144 (Alternative A)

Discussion

S144 is a 1,139-foot-long soundwall located along the state right-of-way line on the eastbound SR 58 Union Avenue on-ramp (see Figure 8 in Appendix A). Figure 8 also shows the 8-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 8 residences. S144 meets the 7-dB noise reduction design goal. Where the segment of the wall that is 8 feet high between STA 142+00 and 148+10 is analyzed as a 10-foot-high wall, it would provide acoustic benefits and the aesthetic benefit of a more uniform-height wall at a small incremental cost. The total reasonable allowance benefiting the 8 residences, based on $55,000 per residence, is $440,000. The estimated total construction cost of the 10-foot to 12-foot variable-height soundwall on spread footing is $445,000, a marginal $5,000 or only 1% more than the total reasonable allowance. Given the margin of error in the cost estimate calculations for the wall, the 1% overage can be considered negligible and the $445,000 cost estimate can be considered to be within the reasonable allowance of $440,000.

No consideration was given for a 12-foot uniform-height soundwall as its cost would significantly exceed the reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S144. The location and recommended heights of the soundwall are shown in Figure 8 in Appendix G. Between STA 139+17 and 141+17, the wall would be 12 feet high. The remaining length of the wall would be 10 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	8	$440,000	$445,000	Yes. (Estimated cost almost identical to reasonable allowance)

Soundwalls S147 & S165 (Alternative A)

Discussion

S147 and S165 work jointly as a system. S147 is a 1,110-foot-long soundwall located along the state right-of-way line at the westbound SR 58/Union Avenue off-ramp, and S165 is a 2,483-foot-long soundwall located along the edge of shoulder on the westbound SR 58 mainline between the Cottonwood Road on-ramp and the Union Avenue off-ramp (see Figures 8 and 9 in Appendix A). Figures 8 and 9 also show the 10-foot minimum wall height for S147 and the 12-foot minimum wall height for S165 necessary to meet the feasibility criteria to benefit a combined total of 63 residences. S147 and S165 meet the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 63 residences, based on $55,000 per residence, is $3,465,000. The estimated total construction cost of the 10-foot-high S147 soundwall and the 12-foot-high S165 soundwall combined, including $187,500 for reconstruction of an existing 375-foot-long retaining wall and $100,000 to relocate 300 feet of an existing storm drain, is $1,540,500, substantially less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S147.
A 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S165. The location and recommended heights of both soundwalls are shown in Figures 8 and 9 in Appendix G.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	63	$3,465,000	$1,540,500	Yes

Soundwalls S164 & S184 (Alternative A)

Discussion

S164 and S184 work jointly as a system. S164 is a 3,403-foot-long soundwall located along the edge of shoulder on the eastbound SR 58 mainline and eastbound Cottonwood Road off-ramp, and S184 is a 760-foot-long soundwall located along the edge of shoulder on the eastbound SR 58 mainline just west of Cottonwood Road (see Figures 8 and 9 in Appendix A). Figures 8 and 9 also show the 10-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit a combined total of 71 residences. S164 and S184 meet the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 71 residences, based on $55,000 per residence, is $3,905,000. The estimated total construction cost of the 10-foot to 14-

foot variable-height S164 soundwall is $1,112,000 and the cost of the 12-foot-high S184 soundwall is $253,000 for a combined total cost of $1,365,000, less than the total reasonable allowance. Both soundwalls are on top of barrier.

Consideration was given for a 14-foot uniform-height S164 soundwall instead of a 10-foot to 14-foot variable-height soundwall; however, given that only a short segment of the wall (133 feet of its 3,403-foot length) is 14 feet high, raising the remaining 3,270 feet of the soundwall to 14 feet high mainly for the aesthetic benefit of a uniform-height soundwall would not justify its $152,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S164. Between STA 149+17 and 150+50, the wall would be 14 feet high. Between STA 150+50 and 176+80, the wall would be 12 feet high. Between STA 176+80 and 183+16, it would be 10 feet high.

A 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S184. The location and recommended heights of both soundwalls are shown in Figures 8 and 9 in Appendix G.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation. The information includes both S164 and S184.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-14	Yes	71	$3,905,000	$1,365,000	Yes

Soundwall S469 (Alternative A)

Discussion

S469 is a 700-foot-long soundwall located along the edge of shoulder on the westbound SR 58 freeway mainline south of Truxtun Avenue (see Figure 1 in Appendix A). Figure 1 also shows the 12-foot minimum wall height necessary to meet the feasibility criteria to benefit 1 recreational center. However, S469 did not meet the 7-dB noise reduction design goal, even when evaluated as a 16-foot-high soundwall, and is therefore considered not reasonable.

Preliminary Noise Abatement Decision and Recommendation

Soundwall S469 has been found to be not reasonable, and therefore, it is recommended to not construct S469.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12	Yes	1	NA	NA	**No**

Soundwall S474 (Alternative A)

Discussion

S474 is a 2,530-foot-long soundwall located along the edge of shoulder on the eastbound SR 58 freeway mainline just south of Truxtun Avenue (see Figure 1 in Appendix A). Figure 1 also shows the 12-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit 69 residences and 1 recreational area. S474 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 69 residences and 1 recreational area, based on $55,000 per residence or recreational area, is $3,850,000. The estimated total construction cost of the 12-foot to 14-foot variable-height S474 soundwall that is mostly on retaining wall and partially on barrier is $669,000, substantially less than the total reasonable allowance.

A14-foot uniform-height soundwall compared to the 12-foot to 14-foot variable-height soundwall would provide additional acoustic benefits to many of the 69 benefited residences and the one recreational area, increase the total number of benefited receivers by 2 to 72 (71 residences and one recreational area), and provide the aesthetic benefit of a uniform-height wall at an incremental cost of $57,000 for a total cost of $726,000 to remain substantially less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S474. The location and recommended height of the soundwall are shown in Figure 1 in Appendix G.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
14	Yes	72	$3,960,000	$726,000	Yes

Soundwall S499 (Alternative A)

Discussion

S499 is a 1,385-foot-long soundwall located along the edge of shoulder on the westbound SR 58 freeway mainline just south of California Avenue (see Figure 2 in Appendix A). Figure 2 also shows the 12-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit 54 residences. S499 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 54 residences, based on $55,000 per residence, is $2,970,000. The estimated total construction cost of the 12-foot to 14-foot variable-height S499 soundwall that is mostly on retaining wall and partially on barrier is $364,000, substantially less than the total reasonable allowance.

A14-foot uniform-height soundwall compared to the 12-foot to 14-foot variable-height soundwall would provide additional acoustic benefits to many of the 54 benefited residences while also providing the aesthetic benefit of a uniform-height wall at an incremental cost of $36,000 for a total cost of $400,000 to remain substantially less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S499. The location and recommended height of the soundwall are shown in Figure 2 in Appendix G.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
14	Yes	54	$2,970,000	$400,000	Yes

Soundwall S526 (Alternative A)

Discussion

S526 is a 5,065-foot-long soundwall located mostly along the edge of shoulder on the eastbound SR 58 freeway mainline between Stockdale Highway and SR 99 (see Figures 2, 3 and 4 in Appendix A). Figures 2, 3 and 4 also show the 8-foot to 16-foot minimum wall heights necessary to meet the feasibility criteria to benefit 46 residences. S526 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 46 residences, based on $55,000 per residence, is $2,530,000. The estimated total construction cost of the 8-foot to 16-foot variable-height S526 soundwall that is mostly on barrier and partially on spread footing is $1,682,000, less than the total reasonable allowance.

To provide acoustic benefits and the aesthetic benefit of a more uniform-height wall, consideration was given to raising the wall height to 12 feet for three wall segments,: (1) the 10-foot-high, 1,200-foot-long wall segment from STA 533+00 to 545+00; (2) the 10-foot-high, approximately 200-foot-long wall segment at the very east end of the soundwall; and (3) the 8-foot-high, approximately 90-foot-long wall segment at the very east end of the soundwall. The incremental cost for the higher wall segments is $70,000 for a total soundwall cost of $1,752,000 to remain less than the total reasonable allowance.

Consideration was given for a 16-foot uniform-height wall but because only 380 feet of the 5,065-foot-long soundwall is 16 feet high and would require raising the wall height of the remaining 4,685 feet of the wall to 16 feet high at a substantial incremental cost of $447,000, the 16-foot uniform-height wall is not being recommended.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 16-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S526. The location and recommended heights of the soundwall are shown in Figures 2, 3, and 4 in Appendix G. S526 would be 10 feet high from STA 512+00 to 532+00 (SR 58 mainline stationing); 12 feet high from STA 532+00 to 542+00, from STA 42+00 to 08+67, and from STA 15+45 to 19+96 (SR 58/SR 99 eastbound-to-southbound connector stationing); 14 feet high from STA 08+67 to 10+19 and from STA 13+89 to 15+45; and 16 feet high from STA 10+19 to 13+89.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-16	Yes	46	$2,530,000	$1,752,000	Yes

Soundwall S531 (Alternative A)

Discussion

S531 is a 1,490-foot-long soundwall located along the edge of shoulder on the westbound SR 58 freeway mainline just south of Stockdale Highway (see Figure 3 in Appendix A). Figure 3 also shows the 10-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 11 residences. S531 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 11 residences, based on $55,000 per residence, is $605,000. The estimated total construction cost of the 10-foot to 12-foot variable-height S531 soundwall on barrier is $487,000, less than the total reasonable allowance.

A12-foot uniform-height soundwall compared to the 10-foot to 12-foot variable-height soundwall would provide acoustic benefits as well as the aesthetic benefit of a uniform-height wall at an incremental cost of only $10,000 for a total cost of $497,000 to remain less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S531. The location and recommended height of the soundwall are shown in Figure 3 in Appendix G.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12	Yes	11	$605,000	$497,000	Yes

Soundwall S656 (Alternative A)

Discussion

S656 is a 1,010-foot-long soundwall on top of retaining wall. The soundwall is along the edge of pavement of southbound Wible Road, a frontage road that parallels the SR 99 freeway. The retaining wall is located just south of Belle Terrace and retains Wible Road while the SR 99 freeway mainline is at the bottom of the retaining wall as a depressed roadway (see Figures 10 and 11 in Appendix A). Figures 10 and 11 also show the 8-foot to 10-foot minimum wall heights necessary to meet the feasibility criteria to benefit 2 residences and a motel. However, S656 did not meet the 7-dB noise reduction design goal, even when evaluated as a 16-foot-high soundwall, and is therefore considered not reasonable.

Preliminary Noise Abatement Decision and Recommendation

Soundwall S656 has been found to be not reasonable, and therefore, it is recommended to not construct S656.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8-10	Yes	3	NA	NA	**No**

Soundwall S661 (Alternative A)

Discussion

S661 is a 658-foot-long soundwall located along the proposed project right-of-way line on the southbound SR 99 freeway mainline just south of Belle Terrace (see Figure 10 in Appendix A). Figure 10 also shows the 12-foot minimum wall height necessary to meet the feasibility criteria to benefit 2 residences. However, S661 did not meet the 7-dB noise reduction design goal, even when evaluated as a 16-foot-high soundwall, and is therefore considered not reasonable.

Preliminary Noise Abatement Decision and Recommendation

Soundwall S661 has been found to be not reasonable, and therefore, it is recommended to not construct S661.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12	Yes	2	NA	NA	**No**

Soundwall S669 (Alternative A)

Discussion

S669 is an 880-foot-long soundwall located along the proposed project right-of-way line on the southbound SR 99 freeway at Belle Terrace (see Figure 10 in Appendix A). Figure 10 also shows the 10-foot to 16-foot minimum wall heights necessary to meet the feasibility criteria to benefit 4 residences and 1 school. S669 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 4 residences and 1 school, based on $55,000 per residence or school, is $275,000. The estimated total construction cost of the 10-foot to 16-foot variable-height soundwall on spread footing is $441,000, exceeding the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

Soundwall S669 has been found to be not reasonable, and therefore, it is recommended to not construct S669.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-16	Yes	5	$275,000	$441,000	**No**

Soundwall S676 (Alternative A)

Discussion

S676 is a 998-foot-long soundwall located along the city right-of-way line on northbound Wible Road (see Figures 4 and 10 in Appendix A). Figures 4 and 10 also show the 8-foot to 10-foot minimum wall heights necessary to meet the feasibility criteria to benefit 13 residences. S676 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 13 residences, based on $55,000 per residence, is $715,000. The estimated total construction cost of the 8-foot to 10-foot variable-height soundwall that is partially on barrier and partially on spread footing is $329,000, less than the total reasonable allowance.

A 10-foot-high wall compared to the 8-foot to 10-foot variable-height wall would provide acoustic benefits and the aesthetic benefit of a uniform-height wall at an incremental cost of $41,000 for a total cost of $370,000 to remain less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S676. The location and recommended height of the soundwall are shown in Figures 4 and 10 in Appendix G.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10	Yes	13	$715,000	$370,000	Yes

Based on the information summarized in Table 3-2, cost estimate calculations in Appendix E, and noise reductions specified in the NSR, the following tables present the engineer's recommendation on the proposed height and reasonableness for each feasible and proposed soundwall in Build Alternative B. Figures in Appendix H graphically show the locations and heights of the recommended soundwalls of Alternative B.

Soundwall S45 (Alternative B)

Discussion

S45 is a 1,982-foot-long soundwall located along the state right-of-way line on the westbound SR 58 mainline between SR 99 and Hughes Lane (see Figures 4 and 5 in Appendix B). Figures 4 and 5 also show the 8-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit 22 residences. S45 meets the 7-dB

noise reduction design goal. The total reasonable allowance benefiting the 22 residences, based on $55,000 per residence, is $1,210,000. The estimated total construction cost of the 8-foot to 14-foot variable-height soundwall on spread footing is $921,000, less than the total reasonable allowance.

Raising the wall height of the segments of the wall that are 8 feet high and 10 feet high to a height of 12 feet would provide acoustic benefits and the aesthetic benefit of a more uniform-height wall at an incremental cost of $73,000 for a total cost of $994,000. The cost of this 12-foot to 14-foot variable-height wall remains less than the total reasonable allowance.

Consideration was given for a 14-foot uniform-height S45 soundwall; however, a 14-foot-high soundwall provides no additional noise reduction compared to the 12-foot-high to 14-foot-high wall.

Preliminary Noise Abatement Decision and Recommendation

A 12-foot-high to 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S45. The location and recommended heights of the soundwall are shown in Figures 4 and 5 in Appendix H. The wall is 12 feet high for the entire length of the soundwall except from STA 42+24 to 44+31 where it is 14 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12-14	Yes	22	$1,210,000	$994,000	Yes

Soundwall S68 (Alternative B)

Discussion

S68 is a 2,399-foot-long soundwall located along the existing right-of-way line on eastbound SR 58 between Hughes Lane and H Street (see Figures 5 and 6 in Appendix B). Figures 5 and 6 also show the 8-foot to 10-foot minimum wall heights necessary to meet the feasibility criteria to benefit 15 residences. S68 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 15 residences, based on $55,000 per residence, is $825,000. The estimated total construction cost of the 8-foot to 10-foot variable-height soundwall that is partially on spread footing and partially on retaining wall is $739,000, less than the total reasonable allowance.

Consideration was given for a 10-foot uniform-height soundwall; however, the cost of a 10-foot-high S68 would be $853,000, exceeding the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

An 8-foot-high to10-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S68. The location and recommended heights of the soundwall are shown in Figures 5 and 6 in Appendix H. The soundwall is 8 feet high for its entire length except from STA 71+00 to 73+40 where it is 10 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8-10	Yes	15	$825,000	$739,000	Yes

Soundwall S71 (Alternative B)

Discussion

S71 is a 1,403-foot-long soundwall located along the back of sidewalk of Roosevelt Street on westbound SR 58 west of H Street (see Figures 5 and 6 in Appendix B). Figures 5 and 6 also show the 8-foot minimum wall height necessary to meet the feasibility criteria to benefit 3 residences. S71 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 3 residences, based on $55,000 per residence, is $165,000. The estimated total construction cost of the 8-foot-high soundwall on spread footing is $448,000, significantly exceeding the total reasonable allowance.

Consideration was given for a 10-foot-high soundwall that would benefit 10 residences, resulting in a total reasonable allowance of $550,000. The estimated total construction cost of the 10-foot-high soundwall, including $215,000 for the reconstruction of an existing 430-foot-long retaining wall, is $757,000, exceeding the total reasonable allowance.

An existing pump station is located at approximately STA 76+20. After further evaluation, consideration was then given to separating S71 into two separate soundwalls, one west of and the other east of the pump station with a gap between the two soundwalls for access to the pump station. The soundwall to the west of the pump station would be 1,235 feet long. As an 8-foot-high wall, it would benefit 1 residence and have a total reasonable allowance of $55,000. The estimated total construction cost of the 8-foot-high soundwall, including reconstruction of the existing 430-foot-long retaining wall, is $592,000, exceeding the $55,000 total reasonable allowance. As a 10-foot-high wall, it would benefit 8 residences for a total reasonable allowance of $440,000 and have an estimated construction cost of $675,000, again exceeding the reasonable allowance.

The soundwall to the east of the pump station would be 124 feet long. As an 8-foot-high wall, it would benefit 2 residences for a total reasonable allowance of $110,000. The estimated total construction cost of the 8-foot-high soundwall is $54,000, less than the total reasonable allowance. This soundwall to the east of the pump station will be named **S71A** to distinguish it from the original S71 soundwall.

Preliminary Noise Abatement Decision and Recommendation

A 8-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S71A. The location and recommended height of the soundwall are shown in Figure 6 in Appendix H.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8	Yes	2	$110,000	$54,000	Yes

Soundwall S93 (Alternative B)

Discussion

S93 is a 633-foot-long soundwall located along the state right-of-way line and Richland Street on westbound SR 58 near Chester Avenue (see Figure 6 in Appendix B). Figure 6 also shows the 16-foot minimum wall height necessary to meet the feasibility criteria to benefit 7 residences. S93 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 7 residences, based on $55,000 per residence, is $385,000. The estimated total construction cost of the 16-foot-high soundwall on spread footing is $345,000, less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 16-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S93. The location and recommended height of the soundwall are shown in Figure 6 in Appendix H.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
16	Yes	7	$385,000	$345,000	Yes

Soundwall S106 (Alternative B)

Discussion

S106 is a 1,174-foot-long soundwall located along the existing right-of-way line on eastbound SR 58 just west of Hughes Lane (see Figure 5 in Appendix B). Figure 5 also shows the 10-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit 15 residences and 1 recreational area. S106 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 15 residences and 1 recreational area, based on $55,000 per residence or recreational area, is $880,000. The estimated total construction cost of the 10-foot to 14-foot variable-height soundwall on spread footing is $562,000, less than the total reasonable allowance.

A 14-foot-high S106 soundwall compared to the 10-foot-high to 14-foot-high soundwall would provide additional acoustic benefits to most of the 15 benefited residences and the one recreational area as well as provide the aesthetic benefit of a uniform-height wall at an incremental cost of $66,000 for a total cost of $628,000 to remain less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S106. The location and recommended height of the soundwall are shown in Figure 5 in Appendix H.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
14	Yes	16	$880,000	$628,000	Yes

Soundwall S107 (Alternative B)

Discussion

S107 is a 1,800-foot-long soundwall located almost entirely on top of a retaining wall along the edge of shoulders of the westbound SR 58 mainline and westbound Chester Avenue off-ramp (see Figures 6 and 7 in Appendix B). A short segment of the soundwall at the Chester Ave off-ramp terminus is along the state right-of-way line. Figures 6 and 7 also show the 8-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 18 residences. S107 meets the 7-dB noise reduction design goal. Where the portion of the wall that is 8 feet high is analyzed as a 10-foot-high wall, it would provide acoustic benefits and the aesthetic benefit of a more

uniform-height wall at a small incremental cost. The total reasonable allowance benefiting the 18 residences, based on $55,000 per residence, is $990,000. The estimated total construction cost of the 10-foot to 12-foot variable-height soundwall that is mostly on retaining wall and partially on spread footing is $421,000, less than the total reasonable allowance.

Consideration was given for a 12-foot uniform-height S107 instead of the 10-foot to 12-foot variable-height soundwall; however, given that only a short segment of the wall (400 feet of its 1,800-foot length) is 12 feet high, raising the remaining 1,400 feet of the soundwall to 12 feet high mainly for the aesthetic benefit of a uniform-height soundwall with minimal acoustic benefit would not justify its $55,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S107. The location and recommended heights of the soundwall are shown in Figures 6 and 7 in Appendix H. The entire length of the wall would be 10 feet high except for the 400 feet between STA 98+00 and 102+00 where it would be 12 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	18	$990,000	$421,000	Yes

Soundwall S108 (Alternative B)

Discussion

S108 is a 3,817-foot-long soundwall located mostly on top of retaining wall along the edge of shoulder of the eastbound SR 58 mainline and partially on barrier along the edge of shoulders of the eastbound Chester Avenue on-ramp and eastbound Union Avenue off-ramp (see Figures 6 and 7 in Appendix B). Figures 6 and 7 also show the 10-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit 58 residences. S108 meets the 7-dB noise reduction design goal. Where the two segments of the wall that are 10 feet high are raised to a height of 12 feet, it would provide acoustic benefits and the aesthetic benefit of a more uniform-height wall at a small incremental cost. The total reasonable allowance benefiting the 58 residences, based on $55,000 per residence, is $3,190,000. The estimated total construction cost of the 12-foot to 14-foot variable-height soundwall that is mostly on retaining wall and partially on barrier is $1,036,000, less than the total reasonable allowance.

Consideration was given for a 14-foot uniform-height S108 instead of the 12-foot to 14-foot variable-height soundwall; however, given that only a short segment of the wall

(520 feet of its 3,817-foot length) is 14 feet high, raising the remaining 3,297 feet of the soundwall to 14 feet high mainly for the aesthetic benefit of a uniform-height soundwall would not justify its $126,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 12-foot-high to 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S108. The location and recommended heights of the soundwall are shown in Figures 6 and 7 in Appendix H. Between STA 89+95 and 122+81, the wall would be 12 feet high. Between STA 122+81 and 128+00, it would be 14 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12-14	Yes	58	$3,190,000	$1,036,000	Yes

Soundwall S119 (Alternative B)

Discussion

S119 is a 1,150-foot-long soundwall located along the edge of shoulder mostly on top of retaining wall and partially on barrier on the westbound SR 58 mainline, east of P Street (see Figure 7 in Appendix B). Figure 7 also shows the 8-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 12 residences. S119 meets the 7-dB noise reduction design goal. Where the portion of the wall that is 8 feet high between STA 113+50 and 116+00 is analyzed as a 10-foot-high wall, it would provide acoustic benefits and the aesthetic benefit of a more uniform-height wall at a small incremental cost. The total reasonable allowance benefiting the 12 residences, based on $55,000 per residence, is $660,000. The estimated total construction cost of the 10-foot to 12-foot variable-height soundwall that is mostly on retaining wall and partially on barrier is $276,000, less than the total reasonable allowance.

Consideration was given for a 12-foot uniform-height S119 instead of the 10-foot to 12-foot variable-height soundwall; however, the 12-foot-high soundwall would provide no acoustic advantages compared to the 10-foot-high to 12-foot-high soundwall and is therefore not being recommended.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S119. The location and recommended heights of the soundwall are shown in Figure 7 in Appendix H. Between STA 113+50 and 121+25, the wall would be 10 feet high. The remaining length of the

wall from STA 121+25 to 124+00 would be 12 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	12	$660,000	$276,000	Yes

Soundwall S144 (Alternative B)

Discussion

S144 is a 1,139-foot-long soundwall located along the state right-of-way line on the eastbound SR 58 Union Avenue on-ramp (see Figure 8 in Appendix B). Figure 8 also shows the 8-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 8 residences. S144 meets the 7-dB noise reduction design goal. Where the portion of the wall that is 8 feet high between STA 142+00 and 148+10 is analyzed as a 10-foot-high wall, it would provide acoustic benefits and the aesthetic benefit of a more uniform-height wall at a small incremental cost. The total reasonable allowance benefiting the 8 residences, based on $55,000 per residence, is $440,000. The estimated total construction cost of the 10-foot to 12-foot variable-height soundwall on spread footing is $445,000, a marginal $5,000 or only 1% more than the total reasonable allowance. Given the margin of error in the cost estimate calculations for the wall, the 1% overage can be considered negligible and the $445,000 cost estimate can be considered to be within the reasonable allowance of $440,000.

No consideration was given for a 12-foot uniform-height soundwall as its cost would significantly exceed the reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S144. The location and recommended heights of the soundwall are shown in Figure 8 in Appendix H. Between STA 139+17 and 141+17, the wall would be 12 feet high. The remaining length of the wall would be 10 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	8	$440,000	$445,000	Yes. (Estimated cost almost

					identical to reasonable allowance)

Soundwalls S147 & S165 (Alternative B)

Discussion

S147 and S165 work jointly as a system. S147 is a 1,110-foot-long soundwall located along the state right-of-way line at the westbound SR 58/Union Avenue off-ramp, and S165 is a 2,483-foot-long soundwall located along the edge of shoulder on the westbound SR 58 mainline between the Cottonwood Road on-ramp and the Union Avenue off-ramp (see Figures 8 and 9 in Appendix B). Figures 8 and 9 also show the 10-foot minimum wall height for S147 and the 12-foot minimum wall height for S165 necessary to meet the feasibility criteria to benefit a combined total of 63 residences. S147 and S165 meet the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 63 residences, based on $55,000 per residence, is $3,465,000. The estimated total construction cost of the 10-foot-high S147 soundwall and the 12-foot-high S165 soundwall combined, including $187,500 for reconstruction of an existing 375-foot-long retaining wall and $100,000 to relocate 300 feet of an existing storm drain, is $1,540,500, substantially less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S147.
A 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S165. The location and recommended heights of both soundwalls are shown in Figures 8 and 9 in Appendix H.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	63	$3,465,000	$1,540,500	Yes

Soundwalls S164 & S184 (Alternative B)

Discussion

S164 and S184 work jointly as a system. S164 is a 3,403-foot-long soundwall located along the edge of shoulder on the eastbound SR 58 mainline and eastbound Cottonwood Road off-ramp. S184 is a 760-foot-long soundwall located along the edge of shoulder on the eastbound SR 58 mainline just west of Cottonwood Road (see Figures 8 and 9 in Appendix B). Figures 8 and 9 also show the 10-foot to 14-foot minimum wall heights for S164 and the 12-foot minimum wall height for S184

necessary to meet the feasibility criteria to benefit a combined total of 71 residences. S164 and S184 meet the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 71 residences, based on $55,000 per residence, is $3,905,000. The estimated total construction cost of the 10-foot to 14-foot variable-height S164 soundwall is $1,112,000 and the cost of the 12-foot-high S184 soundwall is $253,000 for a combined total cost of $1,365,000, less than the total reasonable allowance. Both soundwalls are on top of barrier.

Consideration was given for a 14-foot uniform-height S164 soundwall instead of a 10-foot to 14-foot variable-height soundwall; however, given that only a short segment of the wall (133 feet of its 3,403-foot length) is 14 feet high, raising the remaining 3,270 feet of the soundwall to 14 feet high mainly for the aesthetic benefit of a uniform-height soundwall would not justify its $152,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S164. Between STA 149+17 and 150+50, the wall would be 14 feet high. Between STA 150+50 and 176+80, the wall would be 12 feet high. Between STA 176+80 and 183+16, it would be 10 feet high.

A 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S184. The location and recommended heights of both soundwalls are shown in Figures 8 and 9 in Appendix H.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation. The information includes both S164 and S184.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-14	Yes	71	$3,905,000	$1,365,000	Yes

Soundwall S194 (Alternative B)

Discussion

S194 is a 1,346-foot-long soundwall located along the edge of shoulder of the SR 99/SR 58 northbound-to-eastbound connector (see Figures 4 and 5 in Appendix B). Figures 4 and 5 also show the 12-foot minimum wall height necessary to meet the feasibility criteria to benefit 12 residences. S194 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 12 residences, based on $55,000 per residence, is $660,000. The estimated total construction cost of the 12-foot-high soundwall on top of barrier is $447,000, less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S194. The location and recommended height of the soundwall are shown in Figures 4 and 5 in Appendix H.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12	Yes	12	$660,000	$447,000	Yes

Soundwalls S509 & S519 (Alternative B)

Discussion

S509 and S519 work jointly as a system. S509 is a 935-foot-long soundwall located along the edge of shoulder on the eastbound SR 58 freeway mainline at California Avenue, and S519 is a 770-foot-long soundwall located along the proposed right-of-way line of eastbound SR 58 just north of Marella Way (see Figures 1 and 2 in Appendix B). Figures 1 and 2 also show the 10-foot to 14-foot minimum wall heights for S509 and the 8-foot to 14-foot minimum wall heights for S519 necessary to meet the feasibility criteria to benefit a combined total of 29 residences and 1 school. S509 and S519 meet the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 29 residences and 1 school, based on $55,000 per residence or school, is $1,650,000. The estimated total construction cost of the 10-foot to 14-foot variable-height S509 soundwall is $239,000, and the cost of the 8-foot to 14-foot variable-height S519 soundwall is $295,000 for a combined total cost of $534,000, less than the total reasonable allowance. S509 is partially on retaining wall and partially on barrier. S519 is on spread footing.

14-foot-high S509 and S519 soundwalls compared to the 10-foot-high to 14-foot-high S509 soundwall and the 8-foot-high to 14-foot-high S519 soundwall would provide acoustic benefits and the aesthetic benefit of uniform-height walls at an incremental cost of $109,000 for a combined total cost of $643,000 to remain less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable for S509 and S519 and is therefore recommended for both soundwalls. The location and recommended heights of both soundwalls are shown in Figures 1 and 2 in Appendix H.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation. The information includes both S509 and S519.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
14	Yes	30	$1,650,000	$643,000	Yes

Soundwall S518 (Alternative B)

Discussion

S518 is a 1,395-foot-long soundwall located along the edge of shoulder and the proposed project right-of-way line on the westbound SR 58 freeway mainline between Marella Way and California Avenue (see Figures 1 and 2 in Appendix B). Figures 1 and 2 also show the 12-foot to 16-foot minimum wall heights necessary to meet the feasibility criteria to benefit 11 residences. S518 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 11 residences, based on $55,000 per residence, is $605,000. The estimated total construction cost of the 12-foot to 16-foot variable-height soundwall that is partially on barrier and partially on spread footing is $632,000, exceeding than the total reasonable allowance.

Consideration was given to raising the wall height of the 12-foot-high segment of the soundwall to a height of 14 feet, resulting in 8 additional benefited residences for a total of 19 benefited residences and a total reasonable allowance of $1,045,000. The incremental cost for the higher wall is $35,000 for a total cost of $667,000 for the 14-foot to 16-foot variable-height soundwall.

A 16-foot-high S518 soundwall was considered but because it provided no additional acoustic benefits compared to the 14-foot to 16-foot variable-height wall, it is not being recommended.

Preliminary Noise Abatement Decision and Recommendation

A 14-foot-high to 16-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S518. The location and recommended heights of the soundwall are shown in Figures 1 and 2 in Appendix H. The soundwall is 14 feet high from STA 512+00 to 519+69 and 16 feet high from STA 519+69 to 525+69.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
14-16	Yes	19	$1,045,000	$667,000	Yes

Soundwall S529 (Alternative B)

Discussion

S529 is a 945-foot-long soundwall located along the proposed right-of-way line of the eastbound SR 58 freeway mainline between Marella Way and La Mirada Drive near Centennial Park (see Figure 2 in Appendix B). Figure 2 also shows the 8-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 3 residences. The total reasonable allowance benefiting the 3 residences, based on $55,000 per residence, is $165,000. The estimated total construction cost of the 8-foot to 12-foot variable-height soundwall on spread footing is $328,000, exceeding the total reasonable allowance. S529 also did not meet the 7-dB noise reduction design goal and is therefore considered not reasonable.

However, the Caltrans *Highway Design Manual*, Section 1102.4(2), *Gap Closures*, states that where short gaps exist between areas qualifying for a noise barrier, the closure of these gaps should be considered on a project-by-project basis. If soundwall S529 is not constructed, it would create a soundwall gap of approximately 950 feet long south of the proposed freeway between Marella Way and La Mirada Drive. Along a 4,000-foot stretch of the freeway, this 950-foot soundwall gap would represent the only location on either side of the freeway where no soundwall exists, excluding soundwall gaps at street crossing. Additionally, Centennial Park is a frequent outdoor use area. Traffic noise abatement is recommended for all impacted frequent outdoor use areas.

Preliminary Noise Abatement Decision and Recommendation

Although soundwall S529 has been deemed not reasonable due to cost and not meeting the 7-dB noise reduction design goal, it has special circumstances surrounding it that require giving it further consideration. Its construction would close a 950-foot soundwall gap, and it would minimize traffic noise impacts to the frequent outdoor use areas of Centennial Park. For these reasons, an 8-foot-high to 12-foot-high soundwall is being recommended for S529.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8-12	Yes	3	$165,000	$328,000	**No (However, S529 is being recommended for gap closure)**

Soundwall S530 (Alternative B)

Discussion

S530 is an 815-foot-long soundwall located along the proposed right-of-way line of the westbound SR 58 freeway mainline between Marella Way and La Mirada Drive (see Figure 2 in Appendix B). Figure 2 also shows the 8-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 8 residences. S530 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 8 residences, based on $55,000 per residence, is $440,000. The estimated total construction cost of the 8-foot to 12-foot variable-height soundwall on spread footing is $356,000, less than the total reasonable allowance.

To provide acoustic benefits and the aesthetic benefit of a more uniform-height wall, consideration was given to raising the segment of the wall that is 8 feet high to a wall height of 10 feet. The incremental cost for the higher wall segment is $23,000 for a total soundwall cost of $379,000 for the 10-foot to 12-foot variable-height soundwall to remain less than the total reasonable allowance.

A 12-foot-high S530 soundwall was considered but would provide only minimal acoustic benefits compared to the 10-foot to 12-foot variable-height wall and would not justify its $39,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S530. The location and recommended heights of the soundwall are shown in Figure 2 in Appendix H. The soundwall is 12 feet high from STA 526+41 to 527+71 and 10 feet high from STA 527+71 to 532+94.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	8	$440,000	$379,000	Yes

Soundwalls S536, S544 & S552 (Alternative B)

Discussion

S536, S544, and S552 work jointly as a system. S536 is a 325-foot-long soundwall located along the proposed project right-of-way line. S544 is a 1,270-foot-long soundwall located along the edge of shoulder. S552 is a 135-foot-long soundwall located along the right-of-way line. The three soundwalls are on the westbound SR 58 freeway mainline between Stockdale Highway and La Mirada Drive (see Figures 2 and

3 in Appendix B). Figures 2 and 3 also show the 12-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit 19 residences. The three soundwalls working jointly as a system meet the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 19 residences, based on $55,000 per residence, is $1,045,000. The estimated construction cost of the 12-foot to 14-foot variable-height S536 soundwall on spread footing is $149,000. The cost of the 12-foot-high S544 soundwall on barrier is $422,000. The cost of the 12-foot-high S552 soundwall on retaining wall is $32,000. The estimated total construction cost for the three soundwalls combined is $603,000, which is less than the total reasonable allowance.

Consideration was given for a 14-foot-high S536 soundwall to provide acoustic benefits and the aesthetic benefit of a uniform-height wall. Its incremental cost compared to the 12-foot to 14-foot variable-height wall is $13,000 for a total cost of $616,000 for all three soundwalls combined to remain less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S536.
A 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable for both S544 and S552 and is therefore recommended for these two soundwalls.
The location and recommended heights of all three soundwalls are shown in Figures 2 and 3 in Appendix H.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation. The information includes all three soundwalls: S536, S544, and S552.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12-14	Yes	19	$1,045,000	$616,000	Yes

Soundwalls S537 & S555 (Alternative B)

Discussion

S537 and S555 work jointly as a system. S537 is a 350-foot-long soundwall located along the proposed project right-of-way line, and S555 is a 4,300-foot-long soundwall located partially along the edge of shoulder and partially along the proposed project right-of-way line on the eastbound SR 58 freeway mainline between La Mirada Drive and the SR 99 freeway (see Figures 2, 3 and 4 in Appendix B). Figures 2, 3 and 4 also

show the 10-foot to 16-foot minimum wall heights necessary to meet the feasibility criteria to benefit 51 residences. S537 and S555 meet the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 51 residences, based on $55,000 per residence, is $2,805,000. The estimated total construction cost of the 12-foot-high S537 soundwall on spread footing is $147,000, and the cost of the 10-foot to 16-foot variable-height S555 soundwall that is partially on retaining wall, partially on barrier, and partially on spread footing is $1,556,000 for a combined total cost of $1,703,000, less than the total reasonable allowance.

To provide acoustic benefits and the aesthetic benefit of a more uniform-height S555 soundwall, consideration was given to raising the two segments of the wall that are 10 feet high to a wall height of 12 feet. The incremental cost for the higher wall segments is $71,000 for a total soundwall cost of $1,774,000 for both soundwalls to remain less than the total reasonable allowance.

Consideration was given for a 16-foot uniform-height S555 soundwall instead of a 12-foot to 16-foot variable-height soundwall; however, given that only a short segment of the wall (1,234 feet of its 4,300-foot length) is 16 feet high, raising the remaining 3,066 feet of the soundwall to 16 feet high mainly for the aesthetic benefit of a uniform-height soundwall would not justify its $244,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S537.

A 12-foot-high to 16-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S555. The locations and recommended heights of both soundwalls are shown in Figures 2, 3, and 4 in Appendix H. The wall is 12 feet high from STA 537+50 to 550+00 (SR 58 mainline stationing), from STA 558+00 to 560+00, and from STA 100+00 to 83+94 (connector ramp stationing). It is 14 feet high from STA 550+00 to 550+51, from STA 557+51 to 558+00, and from STA 83+94 to 83+04. The wall is 16 feet high from STA 550+51 to 557+51 and from STA 83+04 to 80+48.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation. The information includes both S537 and S555.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12-16	Yes	51	$2,805,000	$1,774,000	Yes

Soundwall S656 (Alternative B)

Discussion

S656 is a 1,010-foot-long soundwall on top of retaining wall. The soundwall is along the edge of pavement of southbound Wible Road, a frontage road that parallels the SR 99 freeway. The retaining wall is located just south of Belle Terrace and retains Wible Road while the SR 99 freeway mainline is at the bottom of the retaining wall as a depressed roadway (see Figures 10 and 11 in Appendix B). Figures 10 and 11 also show the 8-foot to 10-foot minimum wall heights necessary to meet the feasibility criteria to benefit 2 residences and a motel. However, S656 did not meet the 7-dB noise reduction design goal, even when evaluated as a 16-foot-high soundwall, and is therefore considered not reasonable.

Preliminary Noise Abatement Decision and Recommendation

Soundwall S656 has been found to be not reasonable, and therefore, it is recommended to not construct S656.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8-10	Yes	3	NA	NA	**No**

Soundwall S661 (Alternative B)

Discussion

S661 is a 611-foot-long soundwall located along the proposed project right-of-way line on the southbound SR 99 freeway mainline just south of Belle Terrace (see Figure 10 in Appendix B). Figure 10 also shows the 8-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit 2 residences. However, S661 did not meet the 7-dB noise reduction design goal, even when evaluated as a 16-foot-high soundwall, and is therefore considered not reasonable.

Preliminary Noise Abatement Decision and Recommendation

Soundwall S661 has been found to be not reasonable, and therefore, it is recommended to not construct S661.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8-14	Yes	2	NA	NA	**No**

Soundwall S669 (Alternative B)

Discussion

S669 is an 835-foot-long soundwall located along the proposed project right-of-way line on the southbound SR 99 freeway at Belle Terrace (see Figure 10 in Appendix B). Figure 10 also shows the 8-foot to 10-foot minimum wall heights necessary to meet the feasibility criteria to benefit 4 residences and 1 school. S669 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 4 residences and 1 school, based on $55,000 per residence or school, is $275,000. The estimated total construction cost of the 8-foot to 10-foot variable-height soundwall on spread footing is $312,000, exceeding the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

Soundwall S669 has been found to be not reasonable, and therefore, it is recommended to not construct S669.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8-10	Yes	5	$275,000	$312,000	**No**

Soundwall S676 (Alternative B)

Discussion

S676 is a 998-foot-long soundwall located along the city right-of-way line on northbound Wible Road (see Figures 4 and 10 in Appendix B). Figures 4 and 10 also show the 8-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit 9 residences. S676 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 9 residences, based on $55,000 per residence, is $495,000. The estimated total construction cost of the 8-foot to 14-foot variable-height soundwall that is partially on barrier and partially on spread footing is $370,000, less than the total reasonable allowance.

To provide acoustic benefits and the aesthetic benefit of a more uniform-height wall, consideration was given to raising the segments of the wall that are 8 feet high and 10 feet high to a wall height of 12 feet. The incremental cost for the higher wall segments is $56,000 for a total soundwall cost of $426,000 for the 12-foot to 14-foot variable-height soundwall to remain less than the total reasonable allowance.

A 14-foot-high soundwall would offer no acoustic benefits over the 12-foot to 14-foot

variable-height soundwall, and thus, the 14-foot-high soundwall is not being recommended for S676.

Preliminary Noise Abatement Decision and Recommendation

A 12-foot-high to 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S676. The location and recommended heights of the soundwall are shown in Figures 4 and 10 in Appendix H. The entire length of the wall would be 12 feet high except for the 120-foot-long segment between STA 678+96 and 680+16 where it would be 14 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12-14	Yes	9	$495,000	$426,000	Yes

Based on the information summarized in Table 3-3, cost estimate calculations in Appendix F, and noise reductions specified in the NSR, the following tables present the engineer's recommendation on the proposed height and reasonableness for each feasible and proposed soundwall in Build Alternative C. Figures in Appendix I graphically show the locations and heights of the recommended soundwalls of Alternative C.

Soundwall S90 (Alternative C)

Discussion

S90 is a 1,659-foot-long soundwall located mostly along the edge of shoulder and partially along the existing right-of-way line on the SR 99/SR 58 northbound-to-eastbound connector (see Figures 4 and 5 in Appendix C). Figures 4 and 5 also show the 12-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit 13 residences. S90 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 13 residences, based on $55,000 per residence, is $715,000. The estimated total construction cost of the 12-foot to 14-foot variable-height soundwall is $639,000, less than the total reasonable allowance.

Consideration was given for a 14-foot uniform-height S90 soundwall instead of the 12-foot to 14-foot variable-height soundwall; however, the 14-foot-high soundwall would provide minimal acoustic benefit compared to the 12-foot-high to 14-foot-high soundwall and would not justify its $45,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 12-foot-high to 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S90. The location and recommended heights of the soundwall are shown in Figures 4 and 5 in Appendix I. The wall is 12 feet high from STA 82+00 to 87+00 and from STA 94+00 to 104+35. It is 14 feet high from STA 87+00 to 94+00.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12-14	Yes	13	$715,000	$639,000	Yes

Soundwalls S103 & S109 (Alternative C)

Discussion

S103 and S109 work jointly as a system. S103 is an 890-foot-long soundwall on top of retaining wall, and S109 is a 629-foot-long soundwall on spread footing located along the proposed project right-of-way line. Both soundwalls are along the SR 58/SR 99 westbound-to-northbound connector (see Figures 4 and 5 in Appendix C). Figures 4 and 5 also show the 10-foot to 14-foot minimum wall heights for S103 and the 8-foot to 10-foot minimum wall heights for S109 necessary to meet the feasibility criteria to benefit 14 residences. S103 and S109 meet the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 14 residences, based on $55,000 per residence, is $770,000. The estimated total construction cost of S103 and S109 combined is $461,000, less than the total reasonable allowance.

Increasing the height of the segment of soundwall S109 that is 8 feet high to a height of 10 feet and increasing the height of the short segment at the west end of soundwall S103 that is 12 feet high to a height of 14 feet would provide acoustic benefits as well as the aesthetic benefit of a uniform-height S109 and a more uniform-height S103 soundwall at an incremental cost of $31,000 for a total cost of $492,000 to remain less than the total reasonable allowance.

Further consideration was given for a 14-foot uniform-height S103 soundwall; however, a 10-foot-high S103 at its east end would more aesthetically match the 10-foot height of S109 where the two soundwalls overlap. Additionally, a 14-foot uniform-height S103 would provide only minimal acoustic benefit with no additional benefited receivers compared to a 10-foot to 14-foot variable-height wall and would not justify its incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable for S103 and is therefore recommended. Between STA 97+85 and 100+40, the wall would be 14 feet high. Between STA 100+40 and 101+06, the wall would be 12 feet high. Between STA 101+06 and 106+69, it would be 10 feet high. The location and recommended heights of both soundwalls are shown in Figures 4 and 5 in Appendix I.

A 10-foot-high masonry soundwall has been found to be acoustically feasible and reasonable for S109 and is therefore recommended.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation. The information includes both S103 and S109.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-14	Yes	14	$770,000	$492,000	Yes

Soundwall S561 (Alternative C)

Discussion

S561 is a 3,555-foot-long soundwall located along the edge of shoulder on the eastbound SR 58 freeway mainline between Stockdale Highway and California Ave (see Figures 2 and 3 in Appendix C). Figures 2 and 3 also show the 10-foot to 16-foot minimum wall heights necessary to meet the feasibility criteria to benefit 25 residences and 3 recreational areas. S561 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 25 residences and 3 recreational areas, based on $55,000 per residence or recreational area, is $1,540,000. The estimated total construction cost of the 10-foot to 16-foot variable-height soundwall that is partially on retaining wall and partially on top of barrier is $1,017,000, less than the total reasonable allowance.

Consideration was given to raising the wall height of the 1,300-foot-long segment of the soundwall that is 10 feet high between STA 559+13 and 565+00 and between STA 65+00 and 72+00 to a wall height of 12 feet for the aesthetic benefit of a more uniform-height wall; however, the higher wall would provide no acoustic advantages and is therefore not being recommended.

Consideration was also given for a 16-foot uniform-height S561 soundwall instead of a 10-foot to 16-foot variable-height soundwall; however, given that only a short segment of the wall (400 feet of its 3,555-foot length) is 16 feet high, raising the remaining 3,155 feet of the soundwall to 16 feet high mainly for the aesthetic benefit of a uniform-height soundwall would not justify its $170,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 16-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S561. The location and recommended heights of the soundwall are shown in Figures 2 and 3 in Appendix I. The wall is 10 feet high from STA 559+13 to 565+00 (SR 58 mainline stationing) and from STA 65+00 to 72+00 (eastbound SR 58 to southbound SR 99 connector stationing). It is 12 feet high from STA 544+00 to 559+13 and from STA 72+00 to 74+00. The wall is 14 feet high from STA 74+00 to 75+00 and from STA 79+00 to 79+78. It is 16 feet high from STA 75+00 to 79+00.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-16	Yes	28	$1,540,000	$1,017,000	Yes

Soundwall S610 (Alternative C)

Discussion

S610 is a 606-foot-long soundwall on spread footing located along the right-of-way line of the SR 58/H Street eastbound off-ramp (see Figure 5 in Appendix C). Figure 5 also shows the 10-foot minimum wall height necessary to meet the feasibility criteria to benefit 4 residences. S610 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 4 residences, based on $55,000 per residence, is $220,000. The estimated total construction cost of the soundwall is $286,000, exceeding the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

Soundwall S610 has been found to be not reasonable, and therefore, it is recommended to not construct S610.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10	Yes	4	$220,000	$286,000	**No**

Soundwall S624 (Alternative C)

Discussion

S624 (also known as Soundwall S68 in Alternatives A and B) is a 2,399-foot-long soundwall located along the existing right-of-way line on eastbound SR 58 between Hughes Lane and H Street (see Figures 5 and 6 in Appendix C). Figures 5 and 6 also show the 8-foot to 10-foot minimum wall heights necessary to meet the feasibility criteria to benefit 15 residences. S624 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 15 residences, based on $55,000 per residence, is $825,000. The estimated total construction cost of the 8-foot to 10-foot variable-height soundwall that is partially on spread footing and partially on retaining wall is $739,000, less than the total reasonable allowance.

Consideration was given for a 10-foot uniform-height soundwall; however, the cost of a 10-foot-high S624 would be $853,000, exceeding the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

An 8-foot-high to10-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S624. The location and recommended heights of the soundwall are shown in Figures 5 and 6 in Appendix I. The soundwall is 8 feet high for its entire length except from STA 627+74 to 630+14 where it is 10 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8-10	Yes	15	$825,000	$739,000	Yes

Soundwall S629 (Alternative C)

Discussion

S629 (also known as Soundwall S71 in Alternatives A and B) is a 1,403-foot-long soundwall located along the back of sidewalk of Roosevelt Street on westbound SR 58 west of H Street (see Figures 5 and 6 in Appendix C). Figures 5 and 6 also show the 8-foot minimum wall height necessary to meet the feasibility criteria to benefit 3 residences. S629 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 3 residences, based on $55,000 per residence, is $165,000. The estimated total construction cost of the 8-foot-high soundwall on spread footing is $448,000, significantly exceeding the total reasonable allowance.

Consideration was given for a 10-foot-high soundwall that would benefit 10 residences, resulting in a total reasonable allowance of $550,000. The estimated total construction

cost of the 10-foot-high soundwall, including $215,000 for the reconstruction of an existing 430-foot-long retaining wall, is $757,000, exceeding the total reasonable allowance.

An existing pump station is located at approximately STA 633+00. After further evaluation, consideration was then given to separating S629 into two separate soundwalls, one west of and the other east of the pump station with a gap between the two soundwalls for access to the pump station. The soundwall to the west of the pump station would be 1,235 feet long. As an 8-foot-high wall, it would benefit 1 residence and have a total reasonable allowance of $55,000. The estimated total construction cost of the 8-foot-high soundwall, including reconstruction of the existing 430-foot-long retaining wall, is $592,000, exceeding the $55,000 total reasonable allowance. As a 10-foot-high wall, it would benefit 8 residences for a total reasonable allowance of $440,000 and have an estimated construction cost of $675,000, again exceeding the reasonable allowance.

The soundwall to the east of the pump station would be 124 feet long. As an 8-foot-high wall, it would benefit 2 residences for a total reasonable allowance of $110,000. The estimated total construction cost of the 8-foot-high soundwall is $54,000, less than the total reasonable allowance. This soundwall to the east of the pump station will be named **S629A** to distinguish it from the original S629 soundwall.

Preliminary Noise Abatement Decision and Recommendation

A 8-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S629A. The location and recommended height of the soundwall are shown in Figure 6 in Appendix I.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8	Yes	2	$110,000	$54,000	Yes

Soundwall S649 (Alternative C)

Discussion

S649 (also known as Soundwall S93 in Alternatives A and B) is a 639-foot-long soundwall located along the state right-of-way line and Richland Street on westbound SR 58 near Chester Avenue (see Figure 6 in Appendix C). Figure 6 also shows the 16-foot minimum wall height necessary to meet the feasibility criteria to benefit 7

residences. S649 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 7 residences, based on $55,000 per residence, is $385,000. The estimated total construction cost of the 16-foot-high soundwall on retaining wall is $192,000, less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 16-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S649. The location and recommended height of the soundwall are shown in Figure 6 in Appendix I.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
16	Yes	7	$385,000	$192,000	Yes

Soundwall S661 (Alternative C)

Discussion

S661 is a 613-foot-long soundwall located along the proposed project right-of-way line on the southbound SR 99 freeway mainline just south of Belle Terrace (see Figure 10 in Appendix C). Figure 10 also shows the 8-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 1 residence. However, S661 did not meet the 7-dB noise reduction design goal, even when evaluated as a 16-foot-high soundwall, and is therefore considered not reasonable.

Preliminary Noise Abatement Decision and Recommendation

Soundwall S661 has been found to be not reasonable, and therefore, it is recommended to not construct S661.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
8-12	Yes	1	NA	NA	**No**

Soundwall S663 (Alternative C)

Discussion

S663 (also known as Soundwall S107 in Alternatives A and B) is a 1,875-foot-long soundwall located almost entirely on concrete barrier along the edge of shoulders of the westbound SR 58 mainline and the westbound Chester Avenue off-ramp (see Figures 6 and 7 in Appendix C). A short segment of the soundwall at the Chester Ave off-ramp terminus is along the state right-of-way line. Figures 6 and 7 also show the 10-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 20 residences. S663 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 20 residences, based on $55,000 per residence, is $1,100,000. The estimated total construction cost of the 10-foot to 12-foot variable-height soundwall that is mostly on barrier and partially on spread footing is $592,000, less than the total reasonable allowance.

Consideration was given for a 12-foot uniform-height wall instead of a 10-foot to 12-foot variable-height wall; however, the acoustic benefits of the 12-foot-high wall were minimal compared to the 10-foot to 12-foot variable-height wall, would not result in any additional benefited residences, and would not justify its $63,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S663. The location and recommended heights of the soundwall are shown in Figures 6 and 7 in Appendix I. The entire length of the wall would be 10 feet high except for 332 feet between STA 663+00 and 666+32 where it would be 12 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	20	$1,100,000	$592,000	Yes

Soundwall S664 (Alternative C)

Discussion

S664 (also known as Soundwall S108 in Alternatives A and B) is a 3,837-foot-long soundwall located on top of retaining wall along the edge of shoulder of the eastbound SR 58 mainline and on barrier along the edge of shoulders of the eastbound Chester Avenue on-ramp and eastbound Union Avenue off-ramp (see Figures 6 and 7 in Appendix C). Figures 6 and 7 also show the 10-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit 54 residences. S664 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 54 residences, based on $55,000 per residence, is $2,970,000. The estimated total

construction cost of the 10-foot to 14-foot variable-height soundwall that is mostly on retaining wall and partially on barrier is $972,000, less than the total reasonable allowance.

Where the portion of the wall that is 10 feet high between STA 660+00 and 667+93 is analyzed as a 12-foot-high wall, it would provide acoustic benefits by increasing the number of benefited residences by 4 to a total of 58 as well as provide the aesthetic benefit of a continuous 12-foot-high wall for 2,700 feet of its 3,837-foot length at an incremental cost of only $28,000 for a total cost of $1,000,000.

Consideration was given for a 14-foot uniform-height S664 soundwall instead of a 10-foot to 14-foot variable-height soundwall; however, given that only a short segment of the wall (233 feet of its 3,837-foot length) is 14 feet high, raising the remaining 3,604 feet of the soundwall to 14 feet high mainly for the aesthetic benefit of a uniform-height soundwall would not justify its $155,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S664. The location and recommended heights of the soundwall are shown in Figures 6 and 7 in Appendix I. Between STA 646+59 and 651+97, the wall would be 10 feet high. Between STA 651+97 and 655+67, and between 658+00 and 685+00, it would be 12 feet high. Between STA 655+67 and 658+00, it would be 14 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-14	Yes	58	$3,190,000	$1,000,000	Yes

Soundwall S669 (Alternative C)

Discussion

S669 is an 875-foot-long soundwall located along the proposed project right-of-way line on the southbound SR 99 freeway at Belle Terrace (see Figure 10 in Appendix C). Figure 10 also shows the 10-foot to 14-foot minimum wall heights necessary to meet the feasibility criteria to benefit 3 residences. S669 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 3 residences, based on $55,000 per residence, is $165,000. The estimated total construction cost of the 10-foot to 14-foot variable-height soundwall on spread footing is $420,000, exceeding the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

Soundwall S669 has been found to be not reasonable, and therefore, it is recommended to not construct S669.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-14	Yes	3	$165,000	$420,000	**No**

Soundwall S676 (Alternative C)

Discussion

S676 is a 960-foot-long soundwall located along the city right-of-way line on northbound Wible Road (see Figures 4 and 10 in Appendix C). Figures 4 and 10 also show the 8-foot to 10-foot minimum wall heights necessary to meet the feasibility criteria to benefit 13 residences. S676 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 13 residences, based on $55,000 per residence, is $715,000. The estimated total construction cost of the 8-foot to 10-foot variable-height soundwall that is partially on barrier and partially on spread footing is $329,000, less than the total reasonable allowance.

To provide acoustic benefits and the aesthetic benefit of a uniform-height wall, consideration was given for a 10-foot-high soundwall instead of the 8-foot to 10-foot variable-height soundwall. The incremental cost for the 10-foot-high wall is $46,000 for a total soundwall cost of $375,000 to remain less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S676. The location and recommended height of the soundwall are shown in Figures 4 and 10 in Appendix I.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10	Yes	13	$715,000	$375,000	Yes

Soundwall S677 (Alternative C)

Discussion

S677 (also known as Soundwall S119 in Alternatives A and B) is a 1,100-foot-long soundwall on barrier located along the edge of shoulder on the westbound SR 58 mainline, east of P Street (see Figure 7 in Appendix C). Figure 7 also shows the 10-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 12 residences. S677 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 12 residences, based on $55,000 per residence, is $660,000. The estimated total construction cost of the 10-foot to 12-foot variable-height soundwall on barrier is $340,000, less than the total reasonable allowance.

Consideration was given for a 12-foot uniform-height wall instead of a 10-foot to 12-foot variable-height wall; however, the acoustic benefits of the 12-foot-high wall were minimal compared to the 10-foot to 12-foot variable-height wall, would not result in any additional benefited residences, and would not justify its $27,000 incremental cost.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S677. The location and recommended heights of the soundwall are shown in Figure 7 in Appendix I. Between STA 671+00 and 678+00, the wall would be 10 feet high. The remaining portion of the wall from STA 678+00 to 682+00 would be 12 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	12	$660,000	$340,000	Yes

Soundwall S683 (Alternative C)

Discussion

S683 is a 550-foot-long soundwall located along the proposed project right-of-way line on the southbound SR 99 freeway just south of SR 58 (see Figure 4 in Appendix C). Figure 4 also shows the 14-foot to 16-foot minimum wall heights necessary to meet the feasibility criteria to benefit 8 residences. S683 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 8 residences, based on $55,000 per residence, is $440,000. The estimated total construction cost of the 14-foot to 16-foot variable-height soundwall on spread footing is $357,000, less than the total reasonable allowance.

Consideration was given for a 16-foot-high S683 soundwall to provide acoustic

benefits and the aesthetic benefit of a uniform-height wall. Its incremental cost compared to the 14-foot to 16-foot variable-height wall is $9,000 for a total cost of $366,000 to remain less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 16-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S683. The location and recommended height of the soundwall are shown in Figure 4 in Appendix I.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
16	Yes	8	$440,000	$366,000	Yes

Soundwall S702 (Alternative C)

Discussion

S702 (also known as Soundwall S144 in Alternatives A and B) is a 1,139-foot-long soundwall located along the state right-of-way line on the eastbound SR 58/Union Avenue on-ramp (see Figure 8 in Appendix C). Figure 8 also shows the 8-foot to 12-foot minimum wall heights necessary to meet the feasibility criteria to benefit 8 residences. S702 meets the 7-dB noise reduction design goal. Where the portion of the wall that is 8 feet high between STA 698+91 and 704+91 is analyzed as a 10-foot-high wall, it would provide acoustic benefits and the aesthetic benefit of a more uniform-height wall at a small incremental cost. The total reasonable allowance benefiting the 8 residences, based on $55,000 per residence, is $440,000. The estimated total construction cost of the 10-foot to 12-foot variable-height soundwall on spread footing is $445,000, a marginal $5,000 or only 1% more than the total reasonable allowance. Given the margin of error in the cost estimate calculations for the wall, the 1% overage can be considered negligible and the $445,000 cost estimate can be considered to be within the reasonable allowance of $440,000.

No consideration was given for a 12-foot uniform-height soundwall as its cost would significantly exceed the reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high to 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S702. The location and recommended heights of the soundwall are shown in Figure 8 in Appendix I. Between STA 695+91 and 697+51, it would be 12 feet high. The remaining length of the wall would be 10 feet high.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	8	$440,000	$445,000	Yes. (Estimated cost almost identical to reasonable allowance)

Soundwalls S703 & S721 (Alternative C)

Discussion

S703 and S721 (also known as Soundwalls S147 and S165 in Alternatives A and B) work jointly as a system. S703 is a 1,110-foot-long soundwall located along the state right-of-way line at the westbound SR 58/Union Avenue off-ramp, and S721 is a 2,483-foot-long soundwall located along the edge of shoulder on the westbound SR 58 mainline between the Cottonwood Road on-ramp and the Union Avenue off-ramp (see Figures 8 and 9 in Appendix C). Figures 8 and 9 also show the 10-foot minimum wall height for S703 and the 12-foot minimum wall height for S721 necessary to meet the feasibility criteria to benefit a combined total of 63 residences. S703 and S721 meet the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 63 residences, based on $55,000 per residence, is $3,465,000. The estimated total construction cost of the 10-foot-high S703 soundwall and the 12-foot-high S721 soundwall combined, including $187,500 for reconstruction of an existing 375-foot-long retaining wall and $100,000 to relocate 300 feet of an existing storm drain, is $1,540,500, substantially less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 10-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S703.

A 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S721. The location and recommended heights of both soundwalls are shown in Figures 8 and 9 in Appendix I.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10-12	Yes	63	$3,465,000	$1,540,500	Yes

Soundwalls S722 & S742 (Alternative C)

Discussion

S722 and S742 (also known as Soundwalls S164 and S184 in Alternatives A and B) work jointly as a system. S722 is a 3,403-foot-long soundwall located along the edge of shoulder on the eastbound SR 58 mainline and the eastbound Cottonwood Road off-ramp, and S742 is a 760-foot-long soundwall located along the edge of shoulder on the eastbound SR 58 mainline just west of Cottonwood Road (see Figures 8 and 9 in Appendix C). Figures 8 and 9 also show the 10-foot to 14-foot minimum wall heights for S722 and the 12-foot minimum wall height for S742 necessary to meet the feasibility criteria to benefit a combined total of 71 residences. S722 and S742 meet the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 71 residences, based on $55,000 per residence, is $3,905,000. The estimated total construction cost of the 10-foot to 14-foot variable-height S722 soundwall is $1,112,000 and the cost of the 12-foot-high S742 soundwall is $253,000 for a combined total cost of $1,365,000, which is less than the total reasonable allowance. Both soundwalls are on top of barrier.

Only 133 feet of the 3,403-foot-long S722 soundwall is 14 feet high. Raising the wall height of the remaining 3,270 feet of the wall to 14 feet mainly for aesthetic purposes of having a uniform-height wall would not justify its substantial incremental cost. Where the segment of soundwall S722 that is 10 feet high between STA 733+54 and 739+90 is raised to 12 feet high, it would provide acoustic benefits as well as the aesthetic benefit of a more uniform-height wall at a small incremental cost of $25,000 for a total cost of $1,390,000 for both walls. This amount remains less than the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

A 12-foot-high to 14-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S722. Between STA 705+91 and 707+24, it would be 14 feet high. Between STA 707+24 and 739+90, it would be 12 feet high.

A 12-foot-high masonry soundwall has been found to be acoustically feasible and reasonable and is therefore recommended for S742. The location and recommended heights of both soundwalls are shown in Figures 8 and 9 in Appendix I.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation. The information includes both S722 and S742.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
12-14	Yes	71	$3,905,000	$1,390,000	Yes

Soundwall S815 (Alternative C)

Discussion

S815 is an 800-foot-long soundwall located along the edge of shoulder on the southbound SR 99 freeway mainline and the Rosedale Highway southbound off-ramp (see Figure 14 in Appendix C). Figure 14 also shows the 10-foot minimum wall height necessary to meet the feasibility criteria to benefit 2 residences. S815 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 2 residences, based on $55,000 per residence, is $110,000. The estimated total construction cost of the 10-foot-high soundwall that is partially on concrete barrier and partially on retaining wall is $206,000, exceeding the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

Soundwall S815 has been found to be not reasonable, and therefore, it is recommended to not construct S815.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10	Yes	2	$110,000	$206,000	**No**

Soundwall S818 (Alternative C)

Discussion

S818 is a 690-foot-long soundwall located along the edge of shoulder on the SR 99/Rosedale Highway northbound hook on-ramp (see Figure 14 in Appendix C). Figure 14 also shows the 10-foot minimum wall height necessary to meet the feasibility criteria to benefit 1 hotel. S818 meets the 7-dB noise reduction design goal. The total reasonable allowance benefiting the 1 hotel is $55,000. The estimated total construction cost of the 10-foot-high soundwall on concrete barrier is $203,000, exceeding the total reasonable allowance.

Preliminary Noise Abatement Decision and Recommendation

Soundwall S818 has been found to be not reasonable, and therefore, it is recommended to not construct S818.

The table below summarizes the information used to make the preliminary noise abatement decision and recommendation.

Height (ft)	Acoustically Feasible?	Number of Benefited Residences	Total Reasonable Allowance	Masonry Estimated Construction Cost	Reasonable? (7-dB Noise Reduction and Cost < Allowance?)
10	Yes	1	$55,000	$203,000	**No**

Tables 3-4, 3-5, and 3-6 below summarize the preliminary noise abatement decision and recommendation for all soundwalls in Alternatives A, B, and C. The tables provide the recommended soundwall heights for the soundwalls that are being recommended. For those soundwalls that are not being recommended, they were found to be not reasonable as they did not meet the 7-dB noise reduction design goal and/or the masonry construction cost for those walls were in excess of their total reasonable allowance. The locations and heights of the recommended soundwalls for Build Alternatives A, B and C are shown graphically in the figures of Appendices G, H, and I, respectively.

Table 3-4
Summary of Preliminary Noise Abatement Decision and Recommendation
(Alternative A)

Barrier No.	Location[1]	Station[2]	Length (feet)	Height[3] (feet)
S45	ROW, WB, 58E	36+25 to 56+05	1,982	12
S68	ROW, EB, 58E	56+60 to 80+25	2,399	8-10
S71A	ROW, WB, 58E	76+59 to 77+83	124	8
S88	ES, EB, 58E	82+28 to 101+00	1,307	12
S93	ROW, WB, 58E	89+85 to 96+20	633	16
S106	ROW, EB, 58E	100+68 to 112+48	1,174	8-12
S107	ES, WB, 58E	95+65 to 113+50	1,800	10-12
S108	ES, EB, 58E	89+95 to 128+00	3,817	12-14
S119	ES, WB, 58E	113+50 to 124+00	1,150	10-12
S144	ROW, EB, 58E	139+17 to 150+64	1,139	10-12
S147 S165	ROW/ES, WB, 58E	141+53 to 176+00	S147: 1,110 S165: 2,483	S147: 10 S165: 12
S164 S184	ES, EB, 58E	149+17 to 188+76	S164: 3,403 S184: 760	S164: 10-14 S184: 12
S469	ES, WB, 58W	466+00 to 473+00	700	NR
S474	ES, EB, 58W	461+70 to 487+00	2,530	14
S499	ES, WB, 58W	490+89 to 505+00	1,385	14
S526	ROW/ES, EB, 58W	512+00 to 542+00 to 42+00 to 19+96	5,065	10-16
S531	ES, WB, 58W	524+00 to 539+00	1,490	12
S656	ROW, NB, 99	650+00 to 660+10	1,010	NR
S661	ROW, SB, 99	658+21 to 664+48	658	NR
S669	ROW, SB, 99	665+39 to 671+54	880	NR
S676	ROW, NB, 99	671+51 to 681+37	998	10

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99; 58E – SR 58 (East) located east of SR 99; 99 – SR 99; WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound

[2]Stations are approximate and generally correspond to the freeway mainline stationing

[3]NR – Not Recommended. The soundwall is not reasonable as it did not meet the 7-dB noise reduction design goal and/or the soundwall's estimated masonry construction cost exceeds its total reasonable allowance.

Table 3-5
Summary of Preliminary Noise Abatement Decision and Recommendation
(Alternative B)

Barrier No.	Location[1]	Station[2]	Length (feet)	Height[3] (feet)
S45	ROW, WB, 58E	36+25 to 56+05	1,982	12-14
S68	ROW, EB, 58E	56+60 to 80+25	2,399	8-10
S71A	ROW, WB, 58E	76+59 to 77+83	124	8
S93	ROW, WB, 58E	89+85 to 96+20	633	16
S106	ROW, EB, 58E	100+68 to 112+48	1,174	14
S107	ES, WB, 58E	95+65 to 113+50	1,800	10-12
S108	ES, EB, 58E	89+95 to 128+00	3,817	12-14
S119	ES, WB, 58E	113+50 to 124+00	1,150	10-12
S144	ROW, EB, 58E	139+17 to 150+64	1,139	10-12
S147 S165	ROW/ES, WB, 58E	141+53 to 176+00	S147: 1,110 S165: 2,483	S147: 10 S165: 12
S164 S184	ES, EB, 58E	149+17 to 188+76	S164: 3,403 S184: 760	S164: 10-14 S184: 12
S194	ES, EB, 58E	187+29 to 200+32 to 101+00	1,346	12
S509 S519	ROW/ES, EB, 58W	506+63 to 523+36	S509: 935 S519: 770	S509: 14 S519: 14
S518	ROW/ES, WB, 58W	512+00 to 525+69	1,395	14-16
S529	ROW, EB, 58W	524+11 to 533+55	945	8-12
S530	ROW, WB, 58W	526+41 to 532+94	815	10-12
S536 S544 S552	ROW/ES, WB, 58W	535+35 to 552+16	S536: 325 S544: 1,270 S552: 135	S536: 14 S544: 12 S552: 12
S537 S555	ROW/ES, EB, 58W	534+62 to 559+00 to 100+00 to 80+48	S537: 350 S555: 4,300	S537: 12 S555: 12-16
S656	ROW, NB, 99	650+00 to 660+10	1,010	NR
S661	ROW, SB, 99	658+64 to 664+48	611	NR
S669	ROW, SB, 99	665+63 to 671+54	835	NR
S676	ROW, NB, 99	671+51 to 681+37	998	12-14

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99; 58E – SR 58 (East) located east of SR 99; 99 – SR 99; WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound

[2]Stations are approximate and generally correspond to the freeway mainline stationing

[3]NR – Not Recommended. The soundwall is not reasonable as it did not meet the 7-dB noise reduction design goal and/or the soundwall's estimated masonry construction cost exceeds its total reasonable allowance.

Table 3-6
Summary of Preliminary Noise Abatement Decision and Recommendation
(Alternative C)

Barrier No.	Location[1]	Station[2]	Length (feet)	Height[3] (feet)
S90	ROW/ES, EB, 58E	82+00 to 96+25 to 104+35	1,659	12-14
S103 S109	ROW, WB, 58E	97+85 to 112+73	S103: 890 S109: 629	S103: 10-14 S109: 10
S561	ES, SB, 99	544+00 to 565+00 to 65+00 to 79+78	3,555	10-16
S610	ROW, EB, 58E	606+47 to 612+52	606	NR
S624	ROW, EB, 58E	613+34 to 636+99	2,399	8-10
S629A	ROW, WB, 58E	633+33 to 634+57	124	8
S649	ROW, WB, 58E	646+61 to 653+00	639	16
S661	ROW, SB, 99	658+63 to 664+49	613	NR
S663	ES, WB, 58E	652+42 to 671+00	1,875	10-12
S664	ES, EB, 58E	646+59 to 685+00	3,837	10-14
S669	ROW, SB, 99	665+36 to 671+56	875	NR
S676	ROW, NB, 99	671+51 to 681+00	960	10
S677	ES, WB, 58E	671+00 to 682+00	1,100	10-12
S683	ROW, SB, 99	679+81 to 683+96	550	16
S702	ROW, EB, 58E	695+91 to 707+40	1,139	10-12
S703 S721	ROW/ES, WB, 58E	698+27 to 732+74	S703: 1,110 S721: 2,483	S703: 10 S721: 12
S722 S742	ES, EB, 58E	705+91 to 745+50	S722: 3,403 S742: 760	S722: 12-14 S742: 12
S815	ES, SB, 99	810+00 to 818+00	800	NR
S818	ES, NB, 99	814+15 to 821+05	690	NR

[1]ROW – Right-of-way; ES – Edge of Shoulder; 58W – SR 58 located west of SR 99; 58E – SR 58 (East) located east of SR 99; 99 – SR 99; WB – Westbound; EB – Eastbound; NB – Northbound; SB - Southbound

[2]Stations are approximate and generally correspond to the freeway mainline stationing

[3]NR – Not Recommended. The soundwall is not reasonable as it did not meet the 7-dB noise reduction design goal and/or the soundwall's estimated masonry construction cost exceeds its total reasonable allowance.

Chapter 4. Secondary Effects of Abatement

The abatement recommended in this report may have the potential to result in secondary effects on visual/aesthetic resources and cultural resources, as identified in the technical studies prepared for this project. The recommended noise abatement would not result in secondary effects on biological resources, Waters of the United States, hazardous materials, nor other environmental resources analyzed in the technical studies.

Resources Anticipated to Experience Secondary Effects of Abatement

Visual/Aesthetic Resources

Soundwalls proposed to mitigate noise impacts at residences and recreational facilities for the project may have secondary effects on visual/aesthetic resources. The soundwalls would be visually apparent and would obstruct views and affect the visual character of neighborhoods, according to the Visual Impact Assessment (January 2013). Proposed mitigation measures include planting vines that would climb the side of proposed soundwalls to soften their appearance. Vines would also reduce the opportunity for graffiti and minimize maintenance associated with graffiti removal. Where feasible, landscaping along wall alignments would be incorporated to shield soundwalls and create a landscape buffer along the highway corridor. Planting concepts and hardscape aesthetic design treatments consistent with Caltrans landscaping requirements would minimize adverse effects on overall visual quality associated with soundwalls. While there may be secondary effects to visual/aesthetic resources associated with the construction of the proposed soundwalls, the above-mentioned mitigation measures would minimize those impacts.

Cultural Resources

Three historical resources were identified within the Area of Potential Effects in the Historical Resources Evaluation Report (January 2013): the Friant-Kern Canal, the Lester H. Houchin residence, and the Rancho Vista Tract. Soundwalls are proposed adjacent to or within the Rancho Vista Tract in Alternatives A and B. No soundwalls are proposed adjacent to or within the Rancho Vista Tract in Alternative C. The recommended noise abatement would not result in secondary effects on any of these historical resources.

The Rancho Vista Tract (Tract 1522) is a residential subdivision that Caltrans found to be potentially eligible for the National Register of Historic Places under Criteria A and C. The development is an unusual and important example of post-World War II efforts made to apply prefabrication techniques to tract housing. The boundary of the historic property is generally defined by Stine Road to the east, Stockdale Highway to the north,

McDonald Way to the west, and Quarter Avenue to the south, and excludes some contributing and non-contributing parcels that are part of the original tract along these perimeter streets. Tract 1522 is significant at the local level and has a period of significance that extends from 1950 to 1957, when the residences were constructed. Character-defining features of this tract include design characteristics of the tract and houses. Soundwalls are proposed adjacent to or within the Rancho Vista Tract in Alternatives A and B. No soundwalls are proposed adjacent to or within the Rancho Vista Tract in Alternative C.

Alternative A would have direct adverse effects on the Rancho Vista Tract, as it would physically destroy or damage contributing elements and character-defining features of the district. Therefore, no analysis of secondary effects is required for Alternative A. Alternative B would be about 110 feet from the nearest contributing residence; however, no adverse effects on the historic Rancho Vista Tract are anticipated. Although the elevated structure would alter the views when looking west and northwest, it would not do so in an adverse manner as the integrity of the setting, location, association and feeling of the historic property and its contributing features would remain unchanged. The aforementioned minimization and mitigation measures for Visual/Aesthetic resources would also help minimize the secondary effects associated with the construction of soundwalls near the Rancho Vista Tract. No secondary effects are anticipated for Alternative C.

The Friant-Kern Canal is determined eligible for the National Register of Historic Places and is listed in the California Register of Historic Resources. Completed in 1951, the canal is the key component of the Central Valley Project and is significant at the state level under Criterion A within the context of development, construction, and operation of the Central Valley Project. The canal's period of significance is 1945 to 1951, its period of construction. No soundwalls are proposed adjacent to the Friant-Kern Canal.

The Lester H. Houchin residence and its associated detached garage at 307 South Oleander Avenue (Oleander property) appears to be eligible for the National Register of Historic Places and the California Register of Historic Resources at the local level under Criterion C for its Colonial Revival architecture. The period of significance for this historic property is 1939. No soundwalls are proposed adjacent to the Oleander property.

No archaeological sites were identified as a result of the survey efforts in the Archaeological Survey Report (November 2012). Therefore, no secondary effects to

archaeological sites are anticipated with the construction of the proposed soundwalls for any of the build alternatives.

Resources Not Anticipated to Experience Secondary Effects of Abatement

Biological Resources

There are 25 special status plant species and 17 special status wildlife species identified in the Natural Environment Study (November 2012) that have the potential to occur in the Biological Study Area. The Biological Study Area includes the alignments of the build alternatives, plus a 500-foot buffer area on either side of the project right-of-way. Because soundwalls would not be constructed in any natural habitat areas, no secondary effects to biological resources are anticipated.

Waters of the United States

The proposed project crosses the following Waters Under the Jurisdiction of the United States Army Corps of Engineers: Kern River, Carrier Canal, Central Branch Kern Island Canal, Cross Valley Canal, Friant-Kern Canal, Kern Island Canal, and Stine Canal. In addition, a detention basin at Stockdale Highway and SR 43 is potentially in Army Corps of Engineers jurisdiction. No soundwalls are being recommended near any of these water resources, and thus, no secondary effects to Waters of the United States are anticipated.

Hazardous Materials

There are 68 parcels within the project boundaries that have been identified as having either known, suspected, or potential hazardous materials (Initial Site Assessment, November 2012). The sites with known contamination are parcels associated with oil wells or oil refineries. The remaining sites with suspected or potential contamination are generally associated with commercial or residential uses. Most of these are parcels with inactive oil wells or underground storage tanks or provide auto servicing activities. These locations are either not in close proximity to the proposed soundwalls or are proposed to be acquired through the project, thereby making them not susceptible to secondary effects of abatement. Potential contaminants in most of these parcels include water disposal wells, minor soil contamination, presence of an underground storage tank, or use of chemicals in current operations. Aerially deposited lead, herbicides and pesticides may be present in soils and could be released during ground disturbance activities; soil testing is recommended prior to the construction of soundwalls. Site clean-up may be required before use. The cost to clean up hazardous materials is generally the property owner's responsibility. Any remedial activity would occur before property acquisition. No secondary effects to hazardous materials are anticipated with the construction of the proposed soundwalls for the build alternatives.

Chapter 5. List of Preparers

Gene Ching, P.E., Senior Project Engineer, B.S. Civil Engineering, University of California, Irvine; 21 years of civil/transportation engineering experience. Contribution: Author of Noise Abatement Decision Report

Greg Berg, Senior Scientist - Noise and Vibration, B.A. Acoustics, Columbia College Chicago; 7 years of experience. Contribution: Author of "Affected Land Uses" and "Results of the Noise Study Report" sections.

Leslie Provenzano, Environmental Planner. Master of Planning, University of Southern California; B.A. Anthropology, University of California, Berkeley; B.A. Music, University of California, Berkeley; 5 years of environmental planning experience. Contribution: Author of "Secondary Effects of Abatement" section.

Chapter 6. References

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Appendix K – Preparation Guidelines for Project Report. Section 6H - Noise Abatement Decision Report Section

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Chapter 30 – Highway Traffic Noise Abatement

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BonTerra Consulting, 2012. *Natural Environment Study: Centennial Corridor*

ERM Group, 2012. *Initial Site Assessment: Centennial Corridor*

Appendix A Alternative A – NSR Figures

TRUXTUN AVE
CREEKSIDE APARTMENTS
RA-4/ LT1
RA-3/ ST1A
b
RA-1
RA-2
MOHAWK ST
COMM
BANK
CALIFORNIA AVE
MFR
12'
S469
S474
460
465
470
475
480
485
490
RA-6
RA-7
RA-8/ LT2
RA-9
RA-10
RA-11
RA-12
RA-12A
RA-13
RA-13A
RA-14
RA-15
RA-16
RA-17
RA-18
RA-18A
RA-19
RA-20
RA-21
RA-22
RA-23
RA-24/ ST1
RA-25
RA-26
RA-27
(4 units)
(3 units)
(5 units)
SFR
CARRIER CANAL
COCHRAN DR
HEWLETT ST
LENNOX AVE
GREEN TREE APARTMENTS
GREEN HAVEN APARTMENTS
STOCKDALE GARDEN VILLAS
STOCKDALE PINES
SEE FIGURE 2

LEGEND

- ⊕Rxx – NOISE RECEPTOR SITE
- ⊕ST – SHORTERM MEASUREMENT
- ⊕LT – LONGTERM MEASUREMENT
- b – BENEFITED RESIDENCE
- **SFR** – SINGLE FAMILY RESIDENTIAL
- **MFR** – MULTI–FAMILY RESEDENTIAL
- **COMM** – COMMERCIAL
- – EXISTING WALL
- – SOUNDWALL
- – EXISTING SOUNDWALL
- – REPLACEMENT IN KIND SOUNDWALL
- – PROPERTY TAKE (RESIDENTIAL)
- – PROPERTY TAKE (COMMERCIAL/INDUSTRIAL)
- – EXISTING RIGHT OF WAY
- – DRAINAGE BASIN

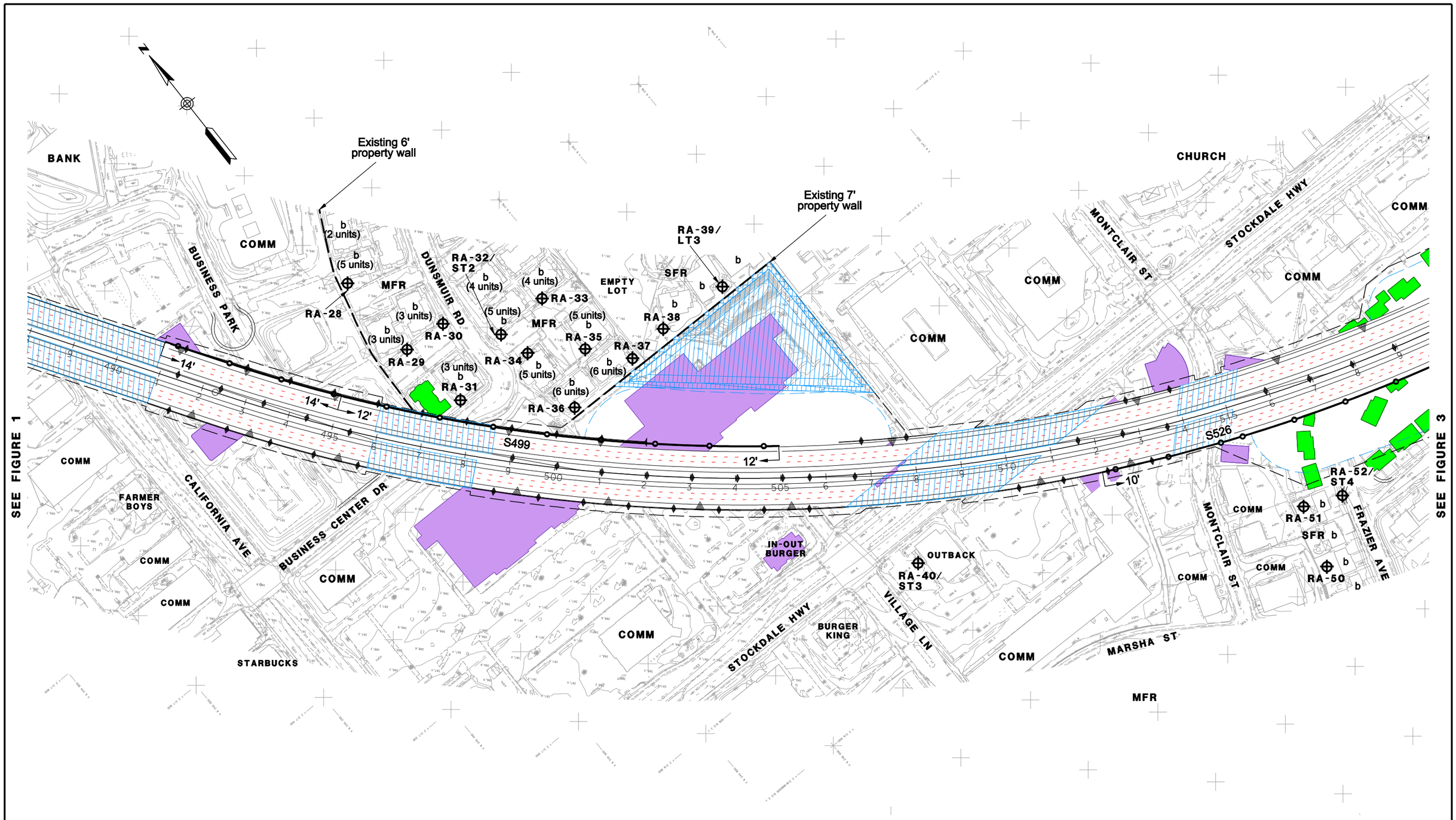
1 : 200ft

0 ft 100ft 200ft 300ft

CENTENNIAL CORRIDOR ALT A NOISE RECEIVER & BARRIER LOCATIONS

APRIL 16, 2012

FIGURE 1



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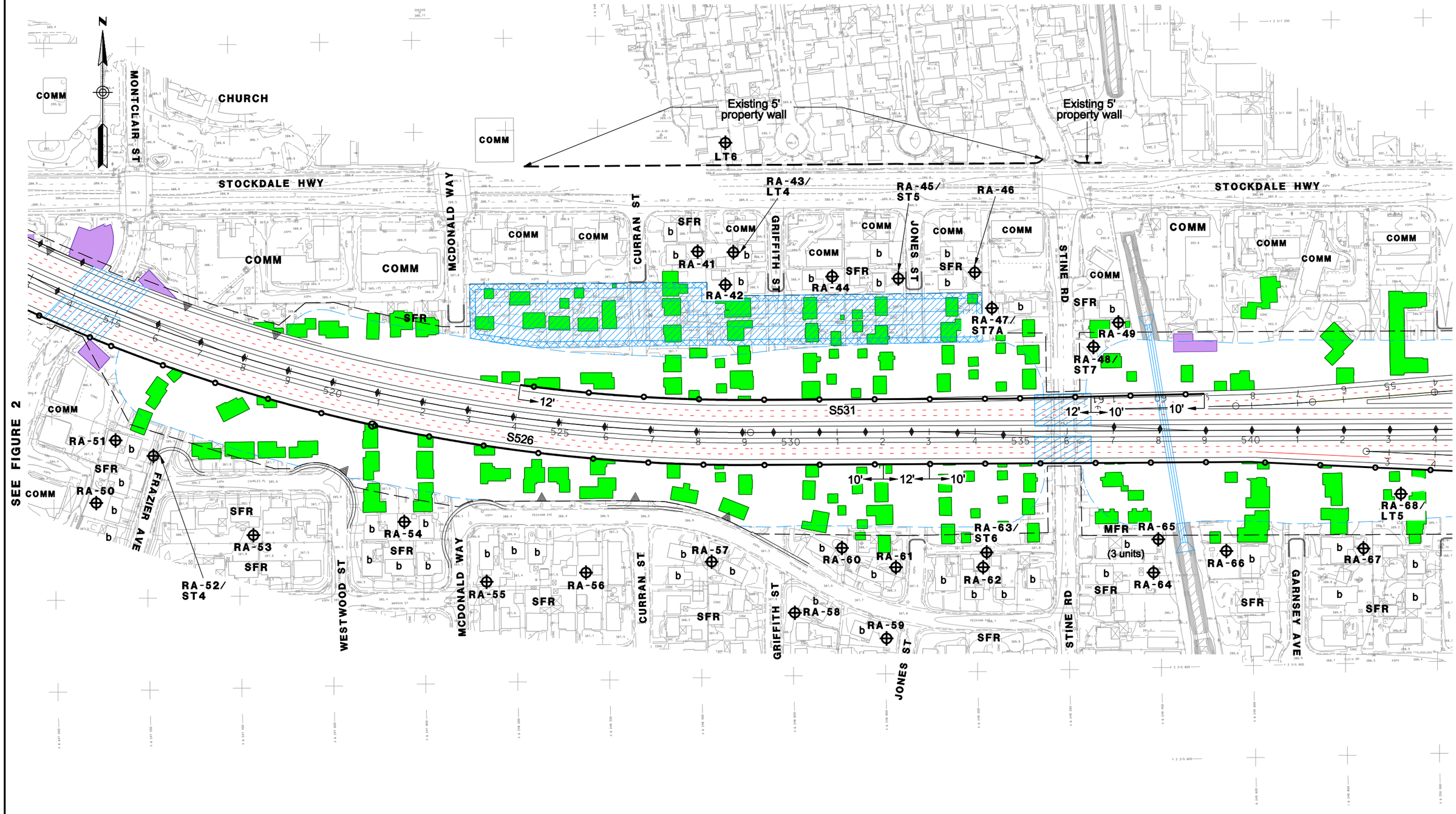
CENTENNIAL CORRIDOR ALT A NOISE RECEIVER & BARRIER LOCATIONS

APRIL 16, 2012 | FIGURE 2



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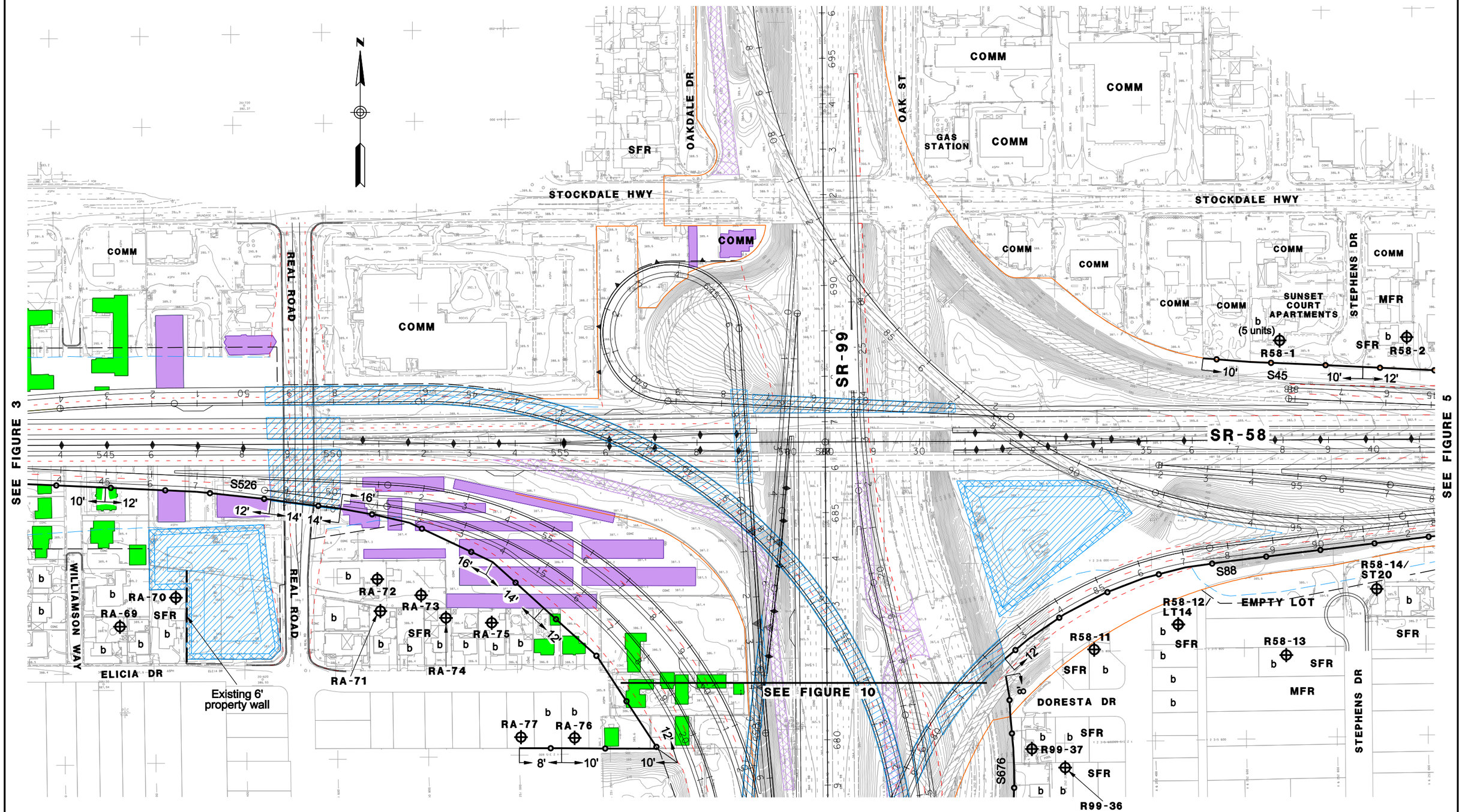
CENTENNIAL CORRIDOR ALT A
NOISE RECEIVER & BARRIER LOCATIONS

MARCH 29, 2012

FIGURE 3



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1 : 200ft

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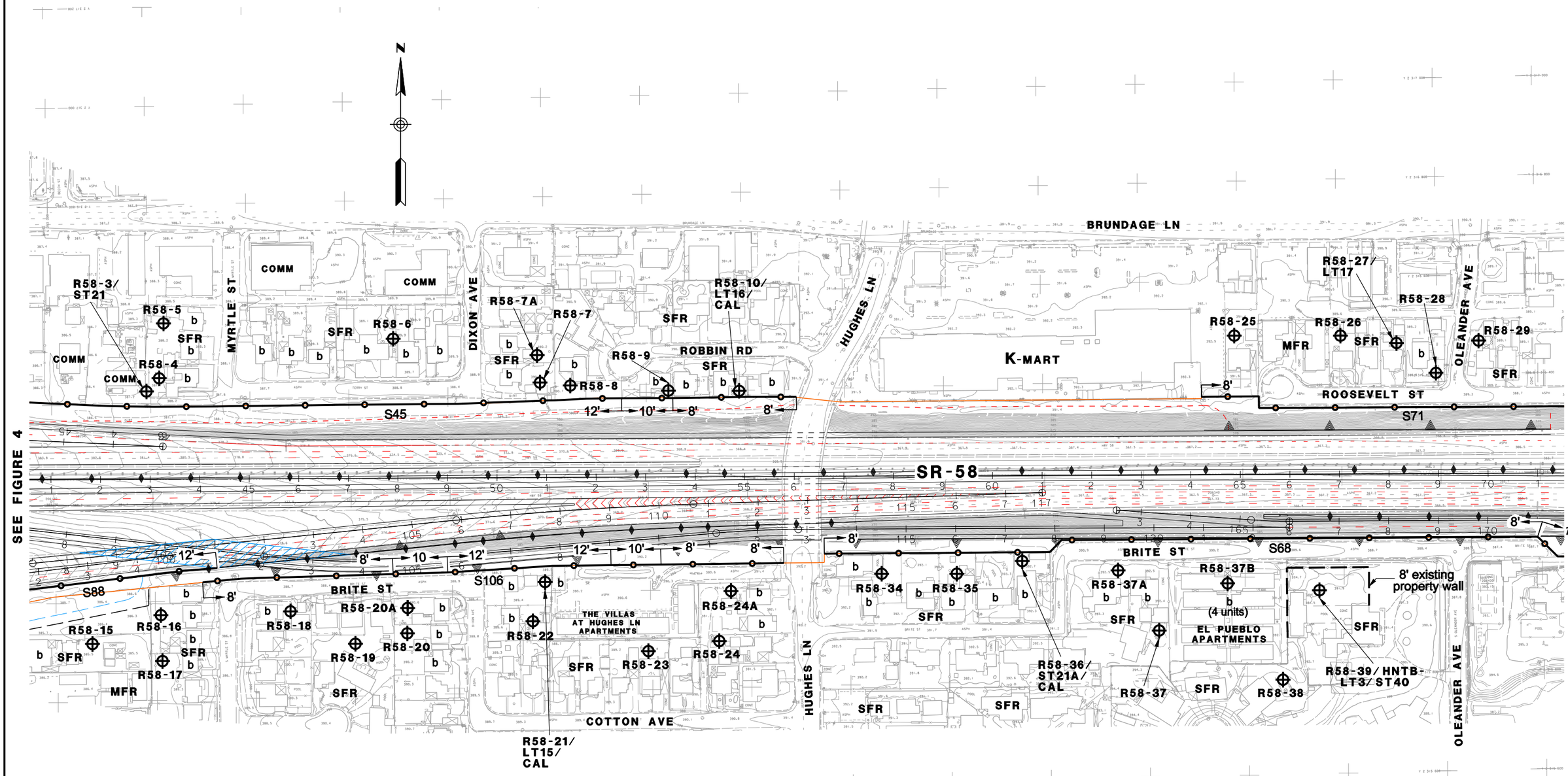
CENTENNIAL CORRIDOR ALT A NOISE RECEIVER & BARRIER LOCATIONS

APRIL 3, 2012

FIGURE 4



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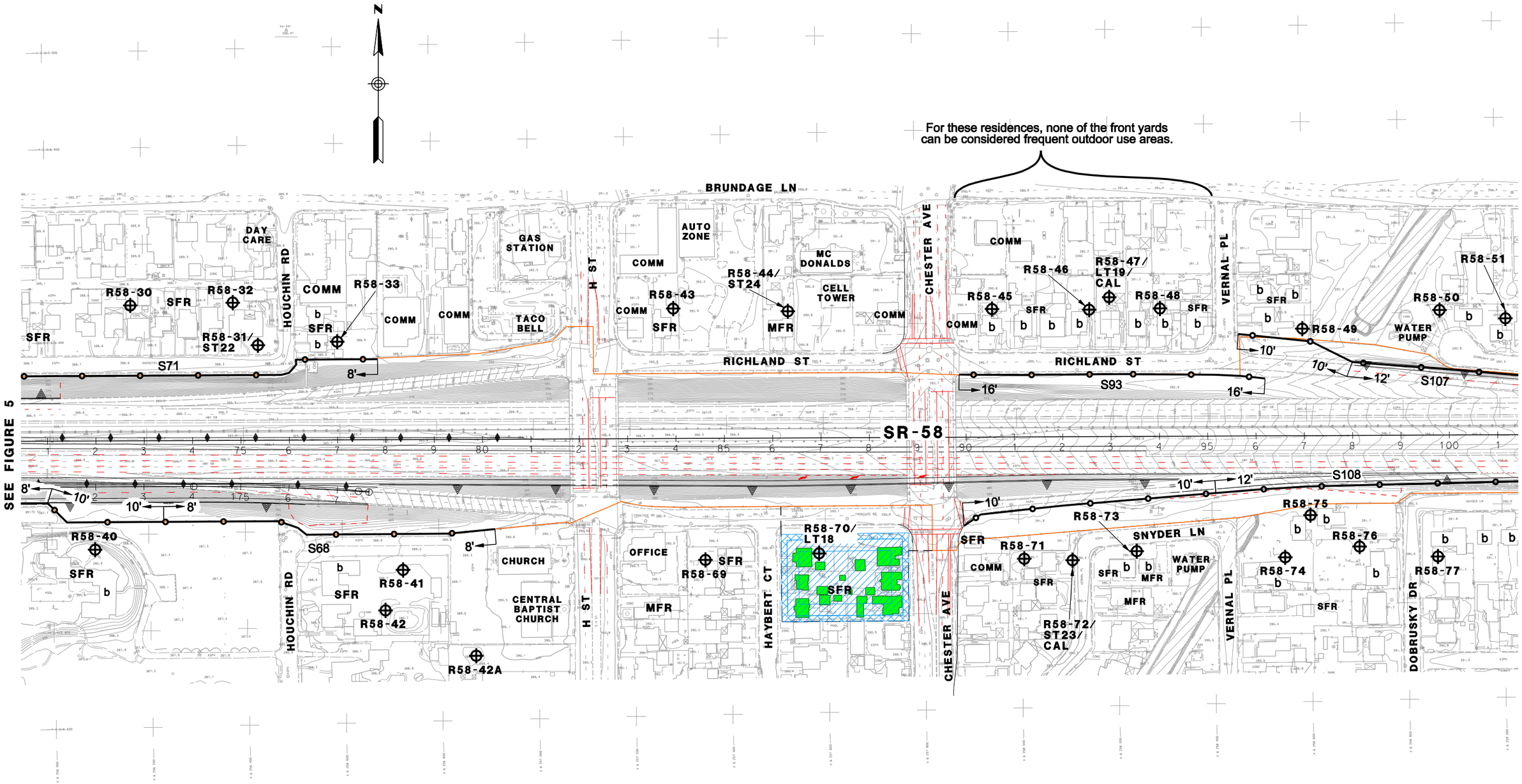
1 : 200ft

0 ft 100ft 200ft 300ft

CENTENNIAL CORRIDOR ALT A NOISE RECEIVER & BARRIER LOCATIONS

APRIL 18, 2012 | FIGURE 5



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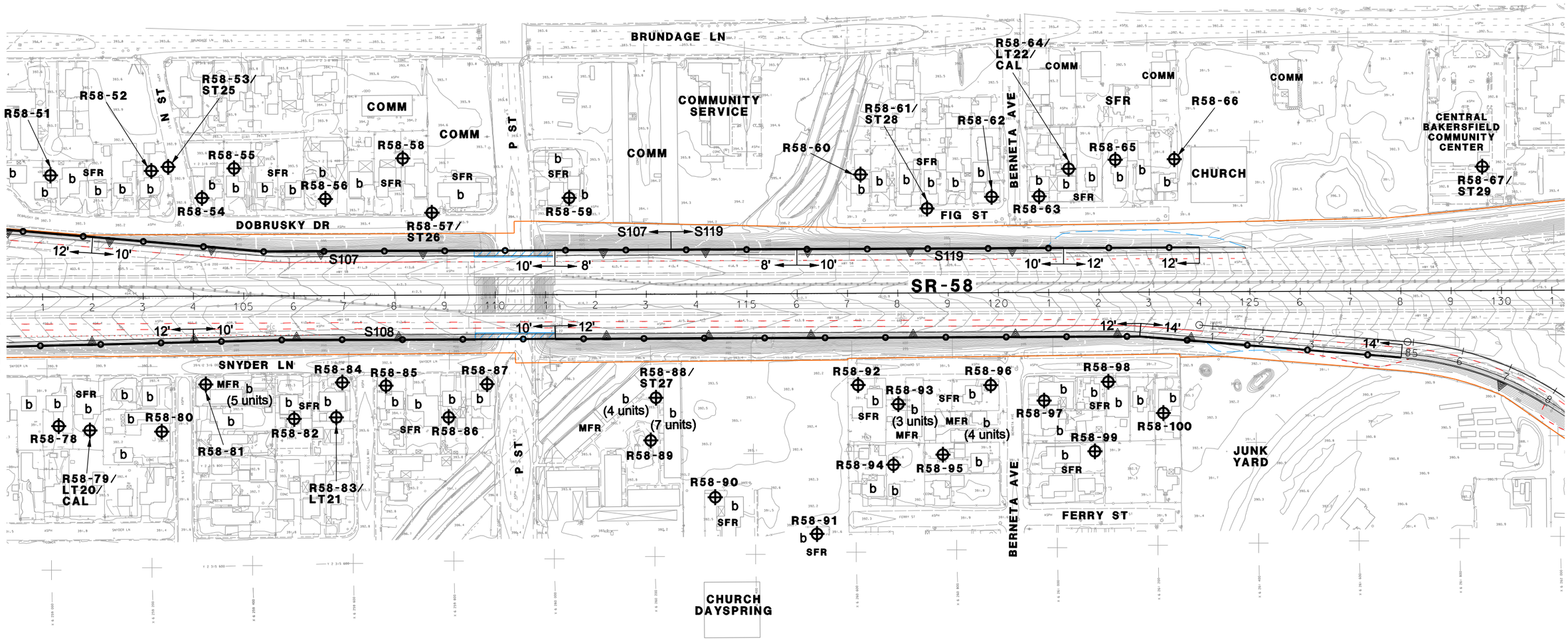
0 ft 100ft 200ft 300ft

CENTENNIAL CORRIDOR ALT A NOISE RECEIVER & BARRIER LOCATIONS

MARCH 27, 2012

FIGURE 6

On both sides of SR-58 in this area, some residences have front yards that can be considered frequent outdoor use areas which are exposed to traffic noise from SR-58.



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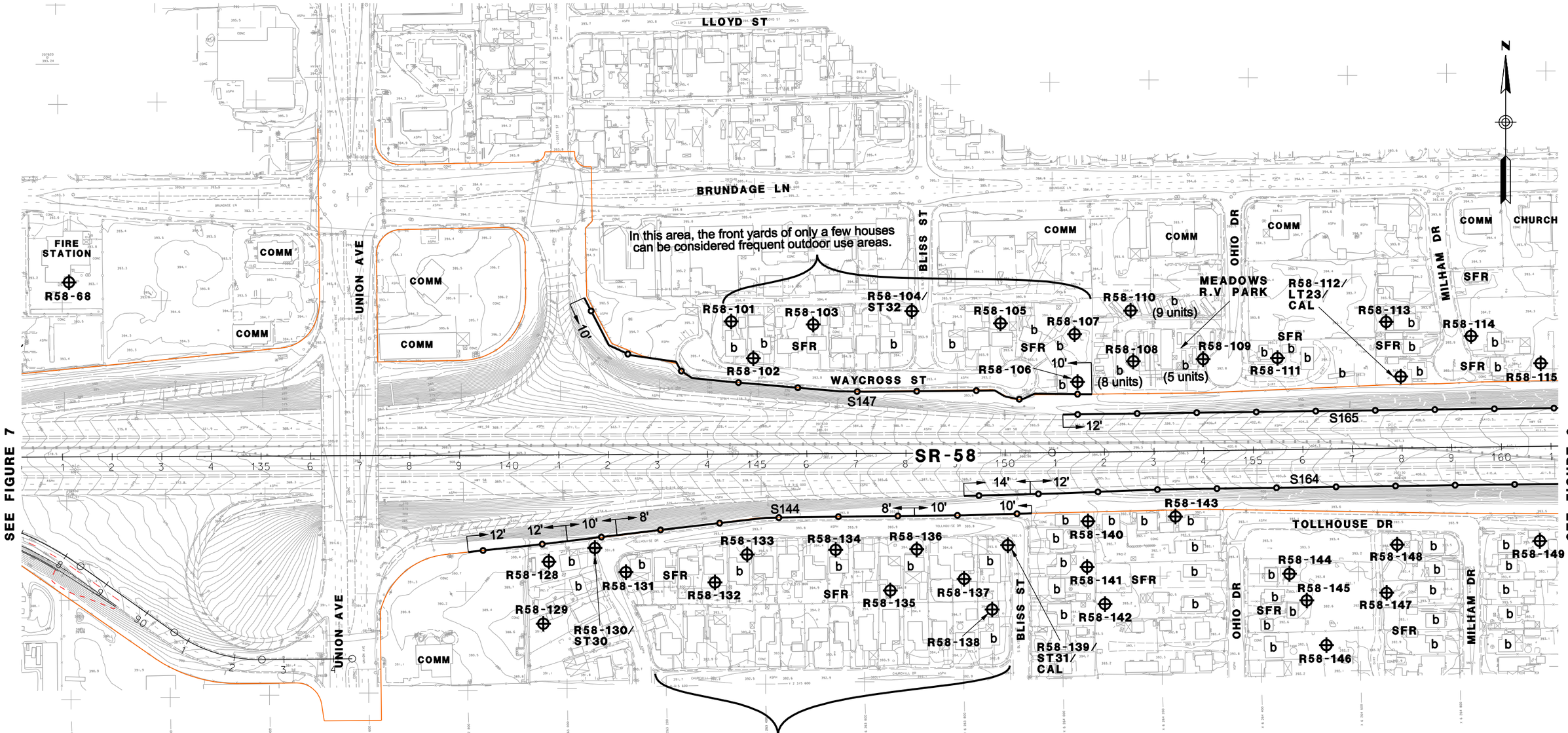
1 : 200ft

0 ft 100ft 200ft 300ft

CENTENNIAL CORRIDOR ALT A NOISE RECEIVER & BARRIER LOCATIONS

APRIL 3, 2012 | FIGURE 7



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1 : 200ft

0 ft 100ft 200ft 300ft

CENTENNIAL CORRIDOR ALT A NOISE RECEIVER & BARRIER LOCATIONS

APRIL 3, 2012

FIGURE 8

SEE FIGURE 8

BRUNDAGE LN

CHURCH
MFR
CHURCH
SFR
TEMPLE
R58-117
SFR
R58-116
EMPTY LOT
R58-115
KING ST
GAS STATION
R58-120/ ST34
SFR
SFR
EMPTY LOT
R58-119
R58-121
R58-118
COMM
KINCAID ST
COMM
R58-123
R58-122
SFR
R58-124
BRUNDAGE APARTMENTS
R58-126
(8 units)
R58-125/ ST35
(2 units)
SFR
R58-127
ST JOHN BAPTIST CHURCH
COTTONWOOD RD

S165
S164
SR-58
12'
10'
S184
S164

R58-152
R58-149
SFR
R58-150
R58-151
MADISON ST
R58-154
SFR
R58-155
SFR
R58-156
R58-153/ LT24/ CAL
KINCAID AVE
R58-157
R58-158
R58-159
SFR
MFR
MFR
(2 units)
DERRELL AVE
SFR
R58-162
R58-161
R58-163
R58-160/ ST33
R58-164
SFR
SFR
MFR
(2 units)
R58-166
R58-165
MFR
R58-167
R58-168
SFR
R58-169
PADRE ST
R58-170
R58-171
R58-172
COMM
COTTONWOOD RD

N

LEGEND

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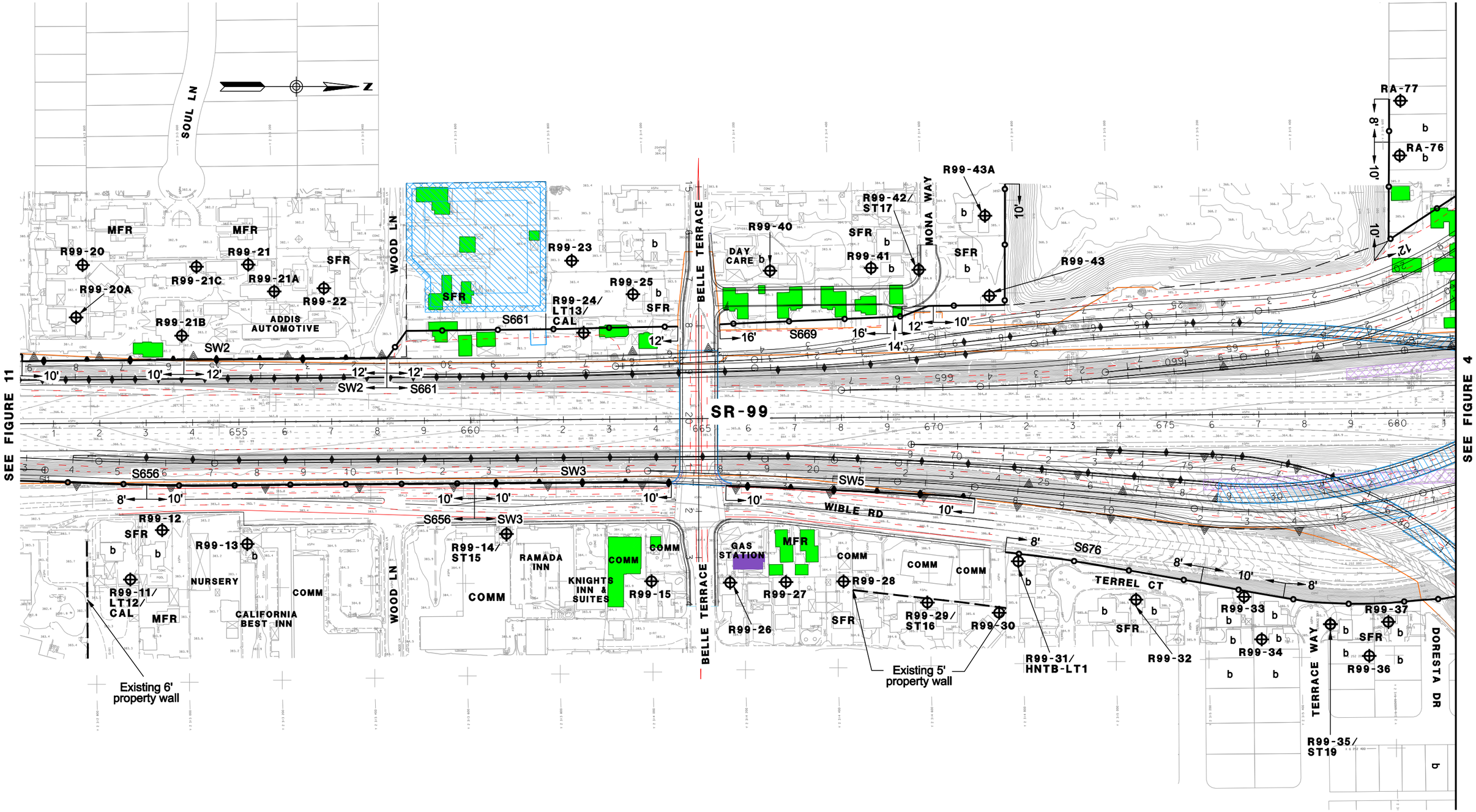
1 : 200ft

0 ft 100ft 200ft 300ft

CENTENNIAL CORRIDOR ALT A NOISE RECEIVER & BARRIER LOCATIONS

APRIL 3, 2012

FIGURE 9



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1 : 200ft

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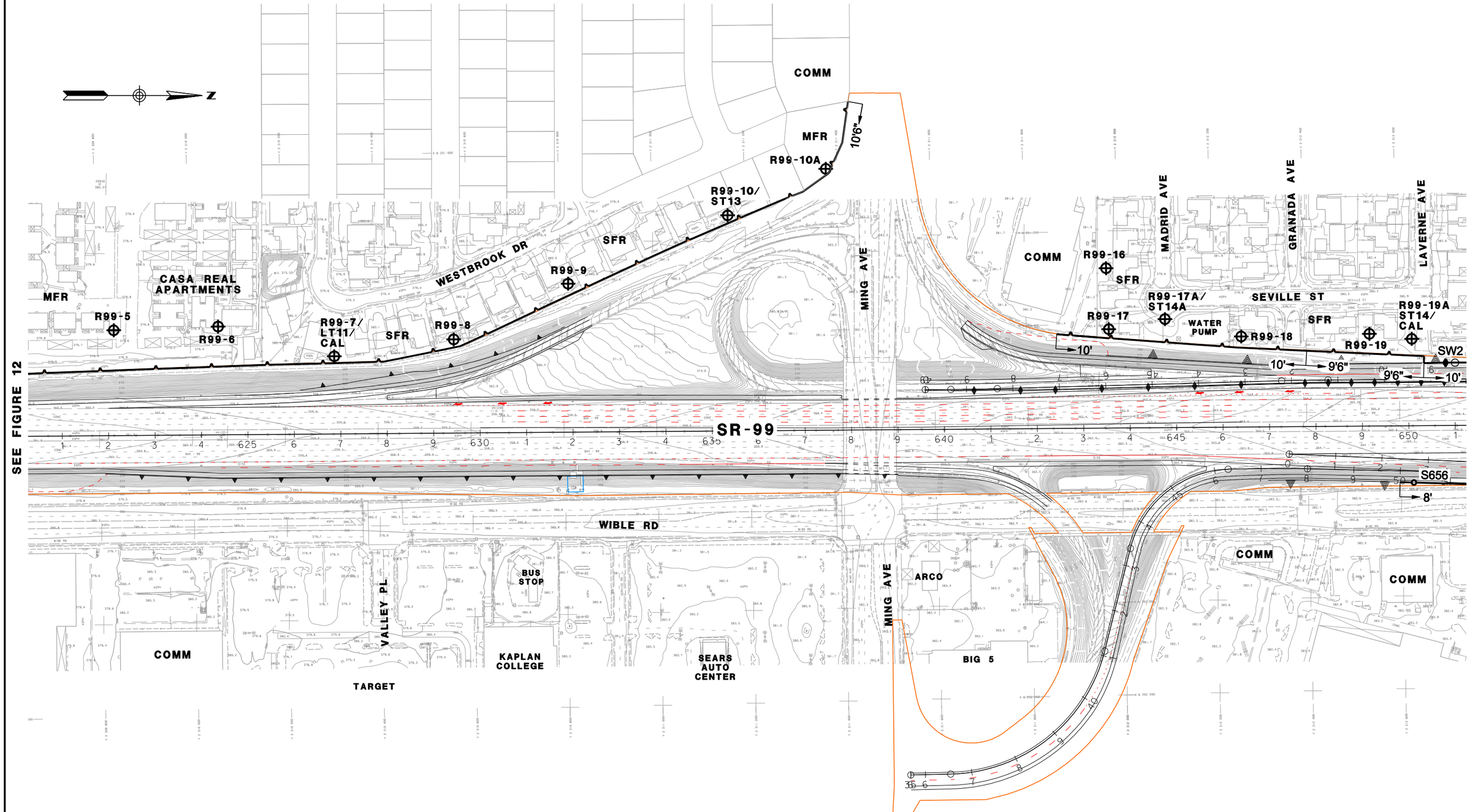
CENTENNIAL CORRIDOR ALT A
NOISE RECEIVER & BARRIER LOCATIONS

APRIL 18, 2012 | FIGURE 10



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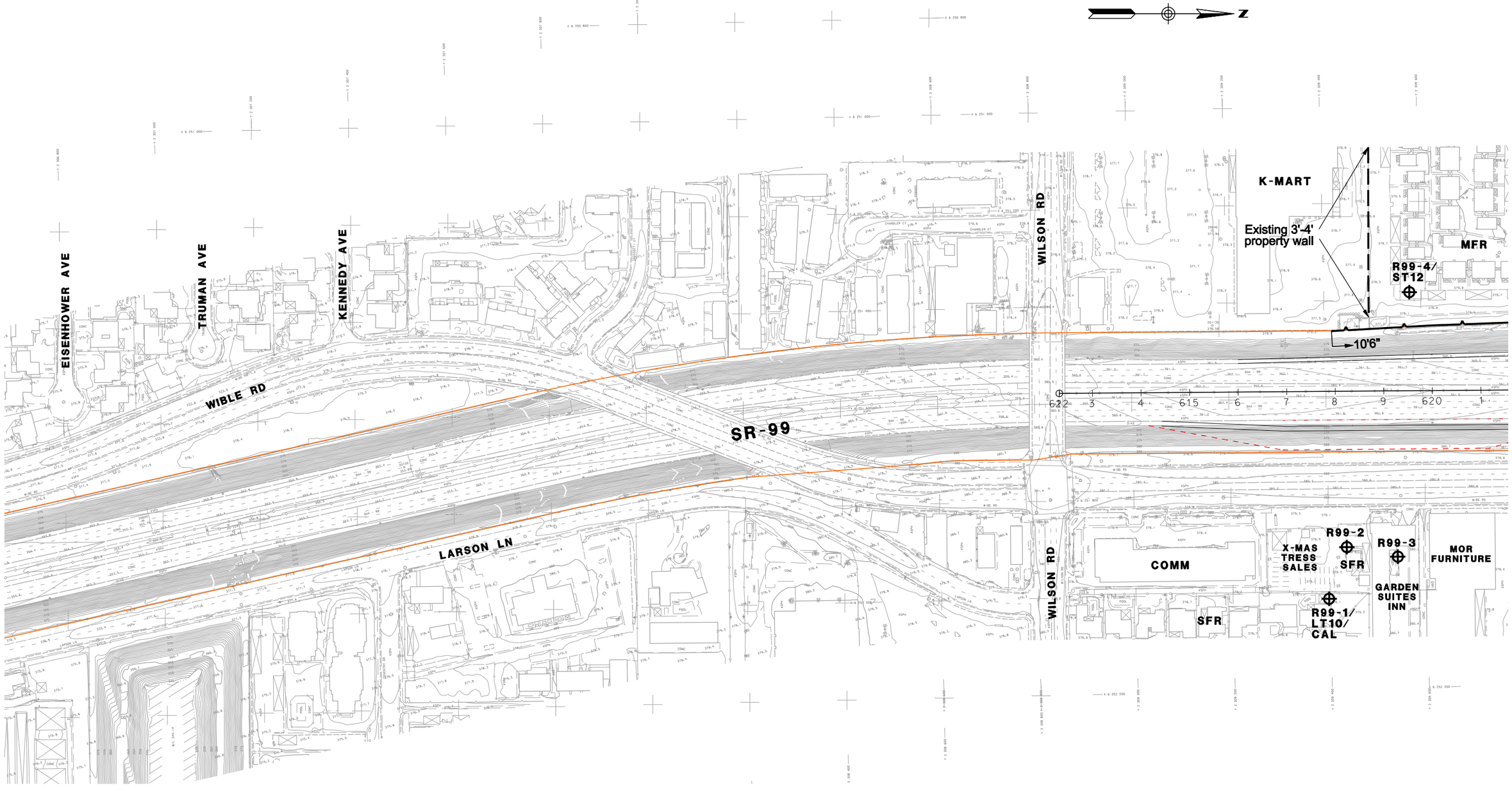
CENTENNIAL CORRIDOR ALT A NOISE RECEIVER & BARRIER LOCATIONS

APRIL 16, 2012 | FIGURE 11



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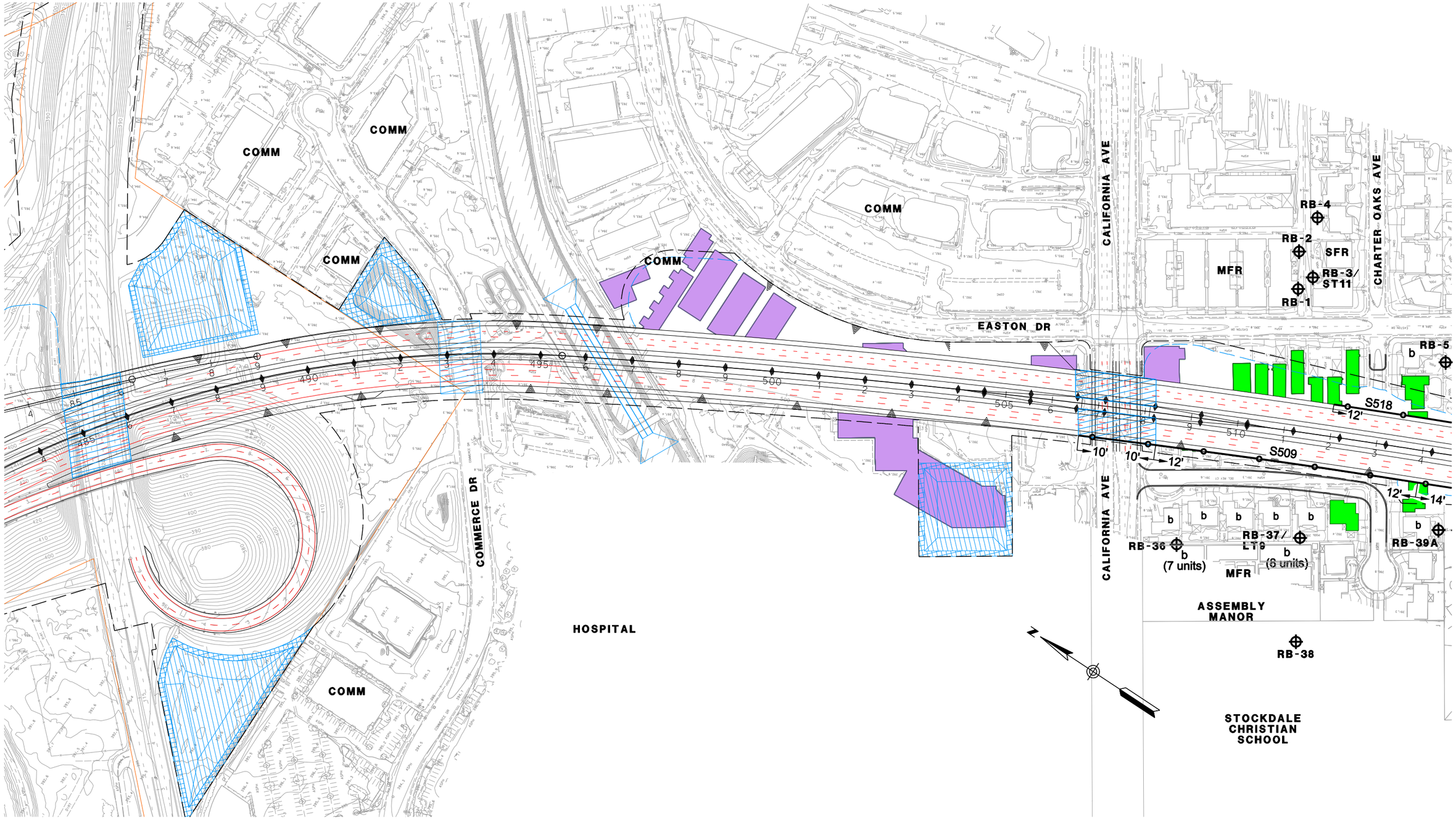
1 : 200ft

0 ft 100ft 200ft 300ft

CENTENNIAL CORRIDOR ALT A NOISE RECEIVER & BARRIER LOCATIONS

MARCH 20, 2012 | FIGURE 12

Appendix B Alternative B – NSR Figures



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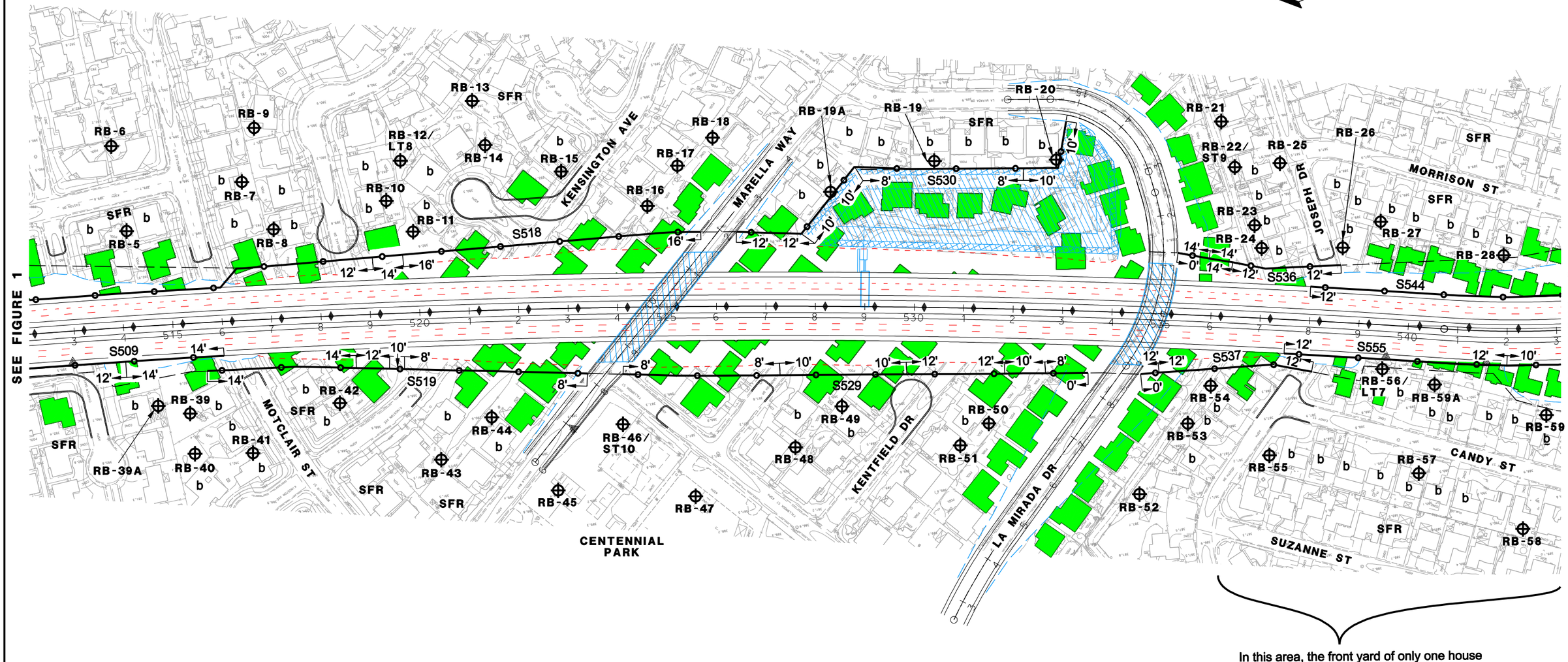
1 : 200ft

0 ft 100ft 200ft 300ft

CENTENNIAL CORRIDOR ALT B
NOISE RECEIVER & BARRIER LOCATIONS

APRIL 16, 2012

FIGURE 1



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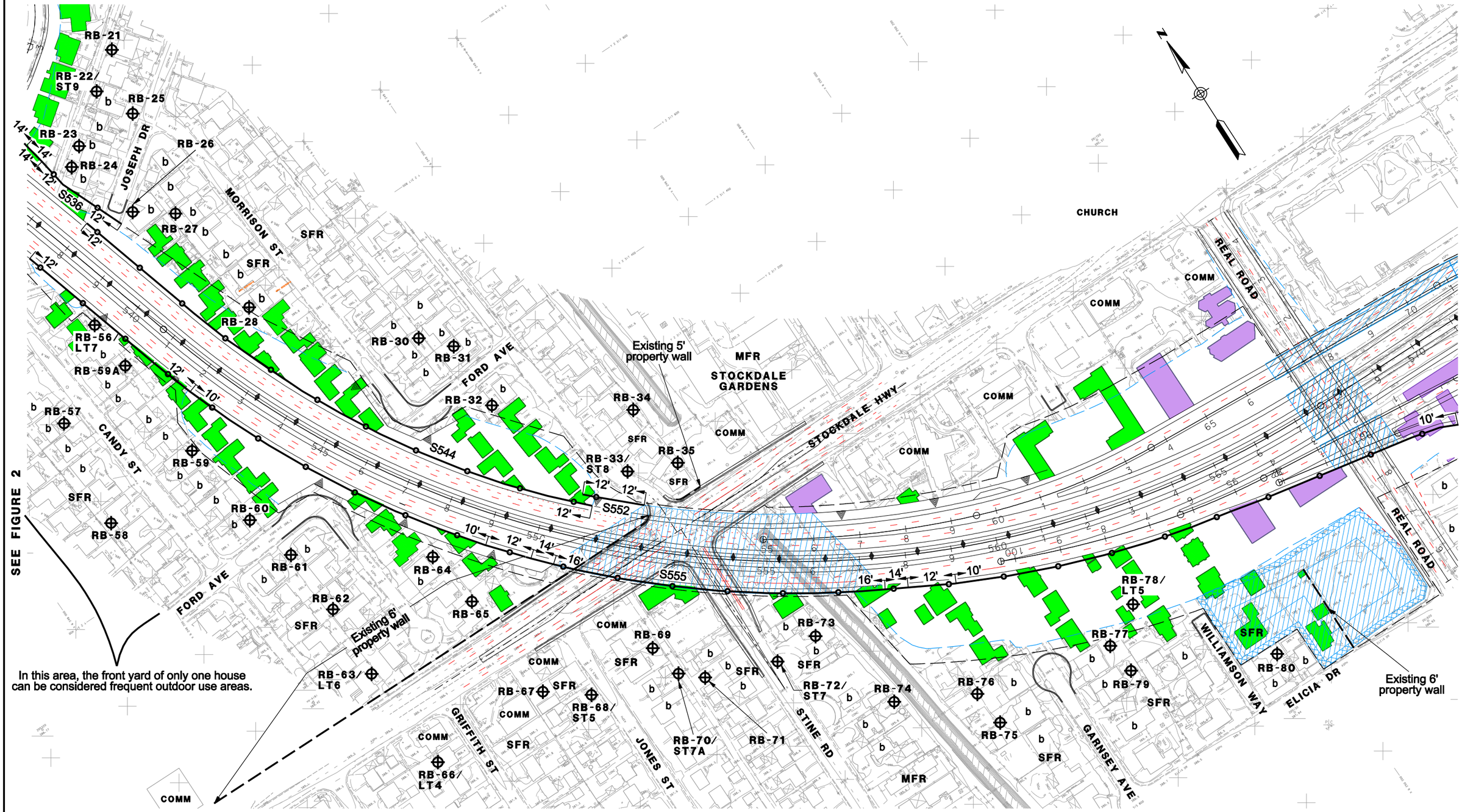
1 : 200ft

0 ft 100ft 200ft 300ft

CENTENNIAL CORRIDOR ALT B NOISE RECEIVER & BARRIER LOCATIONS

APRIL 10, 2012

FIGURE 2



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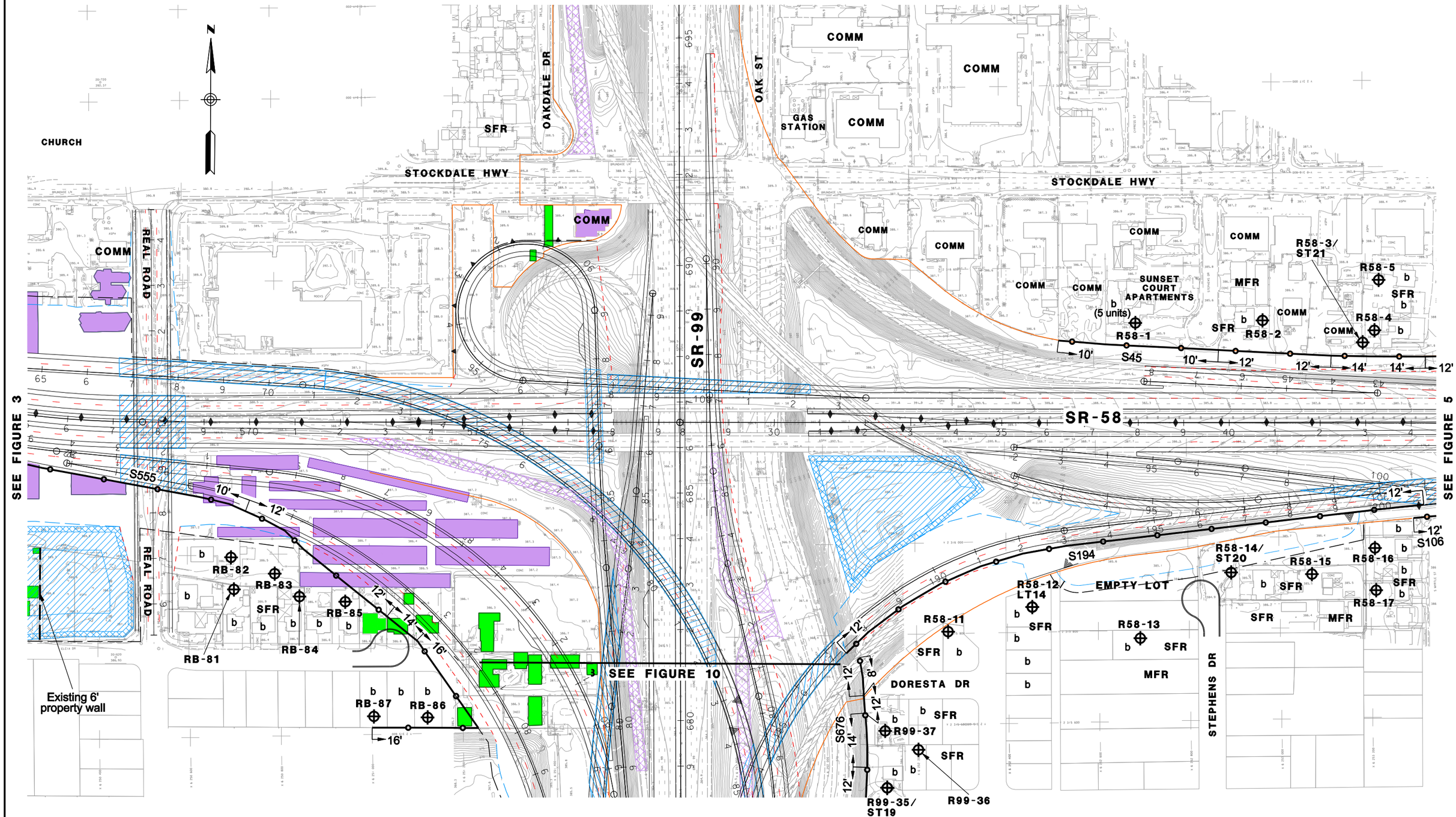
1 : 200ft

0 ft 100ft 200ft 300ft

CENTENNIAL CORRIDOR ALT B
NOISE RECEIVER & BARRIER LOCATIONS

APRIL 10, 2012 | FIGURE 3



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CENTENNIAL CORRIDOR ALT B
NOISE RECEIVER & BARRIER LOCATIONS

APRIL 10, 2012 | FIGURE 4